

The Commercial Car Journal

VOLUME XXVII

PHILADELPHIA, JUNE 15, 1924

NUMBER 4

This Organization is Doing It! Are You?

This Dealer is Selling Transportation. He Studies the Customers Delivery Problem From Every Angle Before Attempting to Sell Him Anything. He Goes After the Big Business First on the Theory That the Little Business Will Follow

By ROY ALDEN

AN average annual increase in sales of 100 per cent for three consecutive years is the accomplishment of the Canavan Motors Corporation, Los Angeles, Pacific Coast distributors for the Walker electric trucks, Diamond T gasoline trucks, the Wolverine semi-trailers, and the Automatic electrical industrial trucks. The Canavan organization offers a striking example of the most highly developed type of automotive merchants, both in the complete range of their lines, and in the thorough and intensive sales methods employed.

J. J. Canavan, president of the corporation, says that the **secret of the success of his company lies in the fact that it sells transportation**—not just trucks; further, that it aims its efforts essentially at big business, on the theory that so-called "little business" will follow.

Examining Prospect's Books

Canavan rarely goes to a prospect at the outset with a sales message. Rather, when he starts to work on a firm, he first requests that he be permitted to make a complete survey of their transportation system. To make a thorough survey, his men must have complete access to all books and records of the prospect's organization, because Canavan's reports include and properly distribute every cent entering into truck operation, maintenance and overhead.

To gain a clear idea of the Canavan method of truck salesmanship, we will follow along with him on a selling campaign he has launched with a large Los Angeles flour manufacturing and distributing plant. We find it requires a superior type of salesmanship to induce the officials of the company to turn over all their confidential cost records to him, but Canavan's brand of salesmanship eventually wins. He puts two accountants who are regular members of his staff at work at the flour company's office. A mechanical expert, also a member of the Canavan company, studies the layout in the garage, loading platforms,

repair shop, etc. In suggesting the survey, Canavan says that his investigation is all-embracing, covering every factor involved in the employment of automotive equipment and in the final reports submitted are found many valuable recommendations that, when carried out, frequently result in saving thousands of dollars annually.

While the accountants are at work on the company's books, Canavan obtains

regular members of the latter's organization.

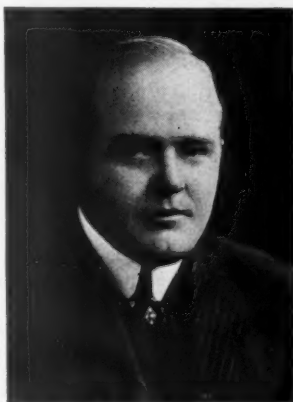
A Five Weeks' Report

When Canavan, after five weeks' investigation, has completed his report on the flour mill's transportation system, he submits a comprehensive array of suggestions and recommendations, many of which have no direct bearing on the particular equipment he has to sell. For instance, at the flour company, Canavan found that there was a considerable amount of double tracking. In one district ten truck trips were made by seven different trucks. There was one trip a day on Thursday, Friday, Saturday, Tuesday, two on Monday and four on Wednesday. Altogether 16.4 tons were delivered and 82 stops made, only four of them being second deliveries.

"Obviously," Mr. Canavan told the officials of the company, "this must be rather unprofitable." Canavan not only pointed out in this case, as he does in all cases, a situation that needs correction, but he suggested how it be corrected. He advised a study of the salesmen's routes, which had no defined boundaries. Their territories constantly overlapped, and they called on whatever day they pleased. With deliveries to follow the next day, such a sales system, he said, could not fail to bring chaos in delivery. As a working basis for correcting this inefficiency by bringing the sales and delivery effort together, Canavan submitted a map on a proposed sales and delivery system. He outlined the advantages of such a plan as follows:

1. Territory of each route definitely outlined. This does away with routes overlapping, which is the principal cause for so much double tracking that had been taking place.

2. Practically every route suggested had a contiguous route being delivered on the same day. This would greatly increase load efficiency for, by making the delivery route boundary elastic it gives the truck dispatcher at least twice the material to work with in making up his



J. J. Canavan
President Canavan Motors Corporation,
Los Angeles, Cal.

permission to substitute one or more of his units for present units operated in delivery service. He wants to show, if possible, lower operating costs if an electric is used on certain routes; also that if a trailer with gas truck was used on other routes it would bring down costs. He has his own men go along with the regular drivers. The Canavan employees, throughout the entire time these "cost tests" are being conducted, report for work at the flour company's plant and go through the entire day as if they were

route logs, the bigger the territory the less the variation.

3. The suggested system would work into regular routes which could have regular drivers and trucks. This would result in some saving in time, but more important it would give better and more satisfactory service to customers.

4. In general the suggested territorial blocks would include not more than two streets of customers, this making it possible for salesman and delivery man to go down one street and back another, resulting in the lowest miles per stop.

At the same time this would increase the intensity and efficiency of the sales effort, with the result that increased business would follow.

In this one matter of double tracking and re-routing suggested by Canavan, a saving of between \$6,000 and \$7,000 could be made. It must be clearly apparent that when a prospect receives such detailed information in a report he is going to read it and absorb it.

The Preliminary Investigation

Before Canavan conducts an extensive survey, he makes a preliminary investigation and feels confident in his own mind that the equipment he has to sell will fit into the business of his prospect. Having once satisfied himself on this score, he then seeks to interest the prospect in permitting him to put his transportation system under the Canavan X-Ray.

Epitomized, his report as submitted to the company showed the following possible savings:

Reduction of excessive time out for repairs	\$1,320
Reduction of time at loading platform	6,665
Walker tractor and trailer	1,720
Miles saved by re-routing	6,401
Stops increased by re-routing	4,500
Walker electrics replacing gas trucks in 4-mile radius	9,600

Estimated total yearly saving. \$30,206

On certain close-in routes, Canavan's report showed that a Walker electric which he had operating for the flour company averaged 8 tons per day for the 25 days it was in service and did its work for \$236 less than the gas trucks. With 40 tons a day being delivered by the company within the radius claimed for the electric, the item of \$1.18 per ton represents quite a sum in the aggregate. A saving of 22 cents per stop or 80 cents per ton, was shown and at 12,000 tons per year the con-

servative figure would be \$9,600. Canavan's report also showed how a saving of \$1,720 could be saved by substituting a tractor and trailer in a certain service.

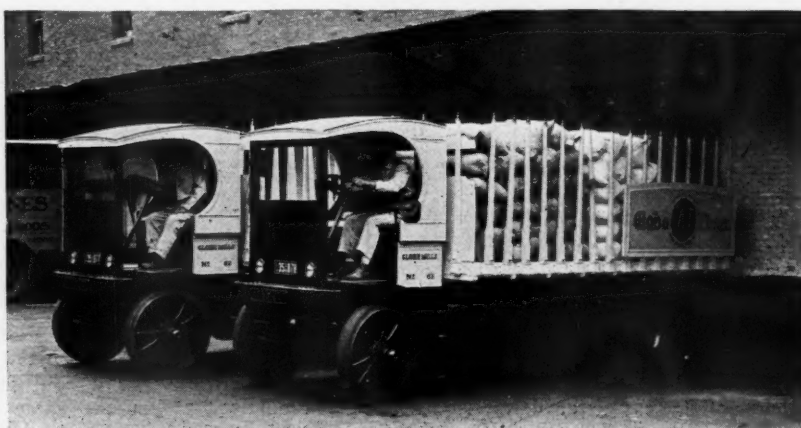
When Canavan has a report ready on a survey, he asks for a three hour audience with the officials of the company where it was made.

"These surveys represent quite an in-



The Kind of Transportation Surveys Made by Canavan Are Rather Expensive But They Are Highly Productive. Following a Survey of the Transportation Needs of the Burr Creamery Company, Los Angeles, Canavan Sold This Firm 54 Electrics as Shown in This Picture.

vestment on our part and we see that they get the proper hearing," explains Canavan. "Sometimes we will have to wait several weeks before we can get the sort of audience we want, but we prefer to wait. We endeavor to get all of the officials of a prospect's organization together and we then go over every item that we have considered and where we believe a saving can be made. Armed with absolutely correct facts and figures taken from the prospect's own books and with facts and figures on our equipment obtained after being in operation in the prospect's own business, you can readily appreciate that we have something very definite to say. There are no 'ifs' or 'may-be's'. We endeavor to anticipate every question that may be raised."



Canavan Puts His Trucks Into the Actual Service of a Prospect's Organization and Has His Own Men Accompany the Drivers to Prove Their Value

Takes Time; But Worth It

It took the Canavan organization two months to get permission from the flour mill company to make the survey. It took one week after the survey was completed and the findings submitted for Canavan to receive the first order for equipment, with every indication that the full program be recommended will eventually be carried out.

"Selling our equipment after we have once completed a survey is not our problem," explains the Los Angeles distributor. "It is getting at a company's books and obtaining accurate costs that takes time."

Some Typical Canavan Reports

Canavan speaks plainly in his reports. For instance, in one survey he found that no painting costs had been entered against any of the trucks. His comment in his report to this firm read as follows:

"This care should not be neglected, for even if the advertising value of a smart looking fleet is not desired, paint protects the body, with the further advantage that a good-looking truck has a psychological effect on the driver, just as a good make of truck has."

Probably the main reason Canavan's reports are so productive is because of the thoroughness of his observations when making a survey. The fact that many of his recommendations do not concern in any way the purchase of any equipment he has for sale is a highly important point. One of Canavan's recent surveys was at a wholesale grocery plant, where he found considerable confusion and delay in loading. On this score he reported to the company as follows:

"Your handicaps are not only in the small loading space, but also a long roundabout route from the wrapping room. There, the orders are put up in boxes and wheeled on four-wheel trucks around a wall which probably lengthens the route about thirty feet. Then the trucks

are shoved past ovens from which bread is being removed. Next they are loaded on the elevator, two or three at a time, and ride down to the first floor where they are unloaded, and brought up to the fifth floor for another load. Although this elevator has good speed for its size, still it is obvious that it cannot always be at either the first floor or the fifth floor just when the hand trucks are ready. Furthermore, it will be noted that the hand truck requires an oper-

(Continued on page 58)

Maintenance to Receive Greater Recognition by the Automotive Industry

Over 800 Delegates Attended the Convention and Maintenance Show at Detroit. Seventy-five Per Cent of the Delegates Were From Out of Town. Demonstration of Equipment a Feature

MUCH was accomplished at the Annual Automotive Service Convention, the outstanding feature of which was that the industry as a whole is giving more recognition to service or maintenance than it has given to it a few years ago. The word service is going out of style, so to speak, and a more definite term is being adopted, namely—maintenance.

It was suggested repeatedly by some speakers that the word maintenance be employed by the repair man in lieu of the word service because it does not give the mental impression to the owner that he is getting something for nothing.

That the maintenance end of the industry is becoming more and more of a problem to be recognized by the manufacturers, was evidenced in the address made by Alfred Reeves, general manager of the N. A. C. C. in which he pledged even more active support by the manufacturers through this organization than has been given to this department of the business in the past.

At the conclusion of Mr. Reeves' address, Chairman F. A. Bonham introduced Sam Miles, veteran show manager, who will in 1925 round a quarter of a century of active service for the industry. The convention to a man rose to its feet to pay tribute to the veteran's ability

as a show manager and to express their respect for his untiring efforts in behalf of the advancement of the industry.

L. M. Shaw, assistant general manager of the N. A. D. A. presented the opening address, in which he stressed the necessity of a thorough understanding with the customer as to what the 90 day warranty really means. He endorsed the "flat-rate system of repair charges" as the only real method of answering the two questions that the owner asks when he takes a car or truck to the repair shop, namely, "How much will it cost?" and "When can I get it?" "Now there is only one way of answering the customer when he asks those two questions," said Mr. Shaw, "and that is to tell him exactly what he is asking about. He can ask those same two questions anywhere else in the world and get an answer to them—in the shoe shop, in the clothing store, at the hardware store or anywhere else and get the answer immediately. Consequently when he comes to the automobile service station he comes in the

same frame of mind and if we expect to get his money, we had better be prepared to answer those two questions."

J. C. Wright, director, Federal Board of Vocational Education, presented a paper on the "Selection and Training of Mechanics." After establishing the fact that there is only one mechanic for every 300 cars in the United States, which is far below the practical figure of one for every hundred, Mr. Wright discussed the various methods now used to train automotive repairmen.

The afternoon program was concluded by a paper on "Shop Layout and General Equipment," by E. M. Young, advisory staff, General Motors Corp. The address was supplemented by a number of lantern slides showing economical arrangements of the service station and dealers' departments and with respect to locations.

The Tuesday session was opened by a very comprehensive paper on fitting pistons and engine bearings, illustrated with slides by D. Andrews, service manager, Continental Motors Corp.

The paper by Col. H. W. Alden, Timken-Detroit Axle Co., followed by a film on the "Proper Adjustment of Rear Axle Gear and Bearings," was the feature of the afternoon. The various steps in bearing adjustment and proper tooth contact were illustrated very clearly.



Three Views in the Service Equipment Show at Detroit. The Booths Were Attractively Arranged and Filled With Labor and Time-Saving Machinery and Tools

In view of the safety first campaigns and drives against accidents the subject of brakes and their adjustment is an important one for the service men. F. C. Stanley, chief engineer, the Raybestos Company, discussed the various types of as well as methods of eliminating brake troubles.

The third day of the convention opened with the paper by Thomas J. Little, Jr., chief engineer of the Lincoln division of the Ford Motor Co., who spoke on "How the Service Man Can Co-operate With the Engineer." He held that the annual model handicapped the repairman and that dealers and service men should use their influence to correct this condition. The engineer should have more time for field work that he might obtain a more thorough knowledge of conditions in the industry.

The address by L. A. Danse, chief metallurgist of the Cadillac Motor Car Co. on "The Effect on Heating Alloys and Steel Parts—the Proper Way to Repair" was illustrated with lantern slides. Many of these slides were microscopic views intended to show how the cold bending of alloys and heating by the methods common in the repair shop were unsatisfactory and undependable, they illustrated forcibly the reason why pirate car parts were not safe or satisfactory. The talk was one of the features of the convention and was received enthusiastically by all who heard it.

"The Effect of Poor Lubrication" was given by Dr. W. K. Lewis, head of the department of chemical engineering of the Mass. Institute of Technology and chemical consultant of the Standard Oil Co. Illustrating his speech was a film made by the Tidewater Oil Co., showing the various processes from the crude to the finished products.

The Thursday session opened with one of the most important subjects in maintenance today, that of selling service.

This subject was handled very thoroughly by Carl H. Page, director of sales and service of the Durant Motors of New Jersey.

The subject of "Simple Accounting System" in connection with dealer profits was admirably handled by Wm. G. Eiben, vice-president of the Comfort Printing Specialty Co. In commenting on the number of automobile dealers and repair shops that have the word "broke" written upon their doors, Mr. Eiben said, that the failure is not due to the fact that there is anything radically wrong with the industry, but that it is due to the lack of knowledge that the dealers have of the cost of conducting their business. "How many shops," asks Mr. Eiben, "can you point out that know their cost of doing their business by days and months. Isn't it a fact that a large majority of the fault lies with the factories, equipment manufacturers and the jobber personnel?"

The closing paper was given by G. A. Fessenden, service engineer of the North East Electric Co. He presented the film on the electrical system. Mr. Fessenden said in part: "The greatest problem of the present day in the electrical service field is to get the rank and file of repair men, into whose hands cars come most frequently for inspection and minor adjustment, to realize what it means to the electrical system when such things as loose connections, wiring faults, battery troubles and the like are not attended to the moment they are discovered."

From every standpoint the convention was a thorough success and from the results obtained it is not unlikely that one of the two semi-annual meetings of the service branch of the N. A. C. C. will be along national lines.

A few hours after the opening of the first Automotive Maintenance Equipment Show this event had established itself as a complete success. The expression of

opinion from several of the exhibitors, men who always display at the big national shows and who are pioneers in the automotive equipment industry, were characteristic of practically all the exhibitors. They stated that no show had been held which so repaid them for their time and expense. These statements are particularly interesting when it is considered that the show was not planned from a sales angle but was organized as an educational movement in the automobile industry to drive home the message of service. While it is true sales will develop as a result of this show, selling was subordinated to the demonstration of equipment. It was because of this policy of the majority of exhibitors, that the interest of the visitors was held throughout. It may be said that all participating in the exhibit became for the time being service men rendering service by demonstrating their equipment and eliminating the usual sales approach all too prevalent at most of the shows.

This unique event was marked by the intense interest of the big men of the industry. They were there in person and actually participated in the events. Company presidents and other officials took part in the demonstrations at the booths, answering a thousand and one questions concerning their products and meeting their numerous friends among the service men. These executives were amply repaid for their trouble, as they obtained much information and criticism from those with whom they came in contact. Mechanics, service managers, factory men and all those connected with the various branches of the service angle carefully inspected all the exhibits and were deeply interested in the demonstration end.

The show committee is to be congratulated on their efforts to make this first event one of the most profitable and successful in the history of industry.

Association Secretaries in Conference in Detroit

Evidence of the organized work being done by dealer associations to better conditions in the automotive trade was seen in a convention of association managers from all parts of the country held in Detroit May 20, under the auspices of the National Automobile Dealers' Association. Delegates were present from city associations from coast to coast and from several State associations. The exchange of ideas emphasized the quality of the work that is being done in the interest of the entire industry and the motor vehicle owning public by the associations and their executives.

The principal exchange of information was on the subject of developing automobile salesmen. The managers took home with them reports of three successful association plans, one of which educated outside men for automobile salesmanship while the other two aided men already in the business in improving the quality of their salesmanship.

Claude Holgate, manager of the Newark, New Jersey, Automobile Trade Association, started the discussion by de-

scribing an automobile salesmanship school conducted over a period of weeks for 60 men recruited from outside the industry. These men, who paid \$50 each for the course, which cost the association about two-thirds that sum in addition, attended night classes while they continued their regular work. All but a few of the 60 later qualified for sales positions with Newark dealers.

Herbert Buckman, manager of the Cleveland association and Charles A. Baird, of Youngstown, told of schools conducted to develop salesmen already in the business, both reporting that the work had been successful.

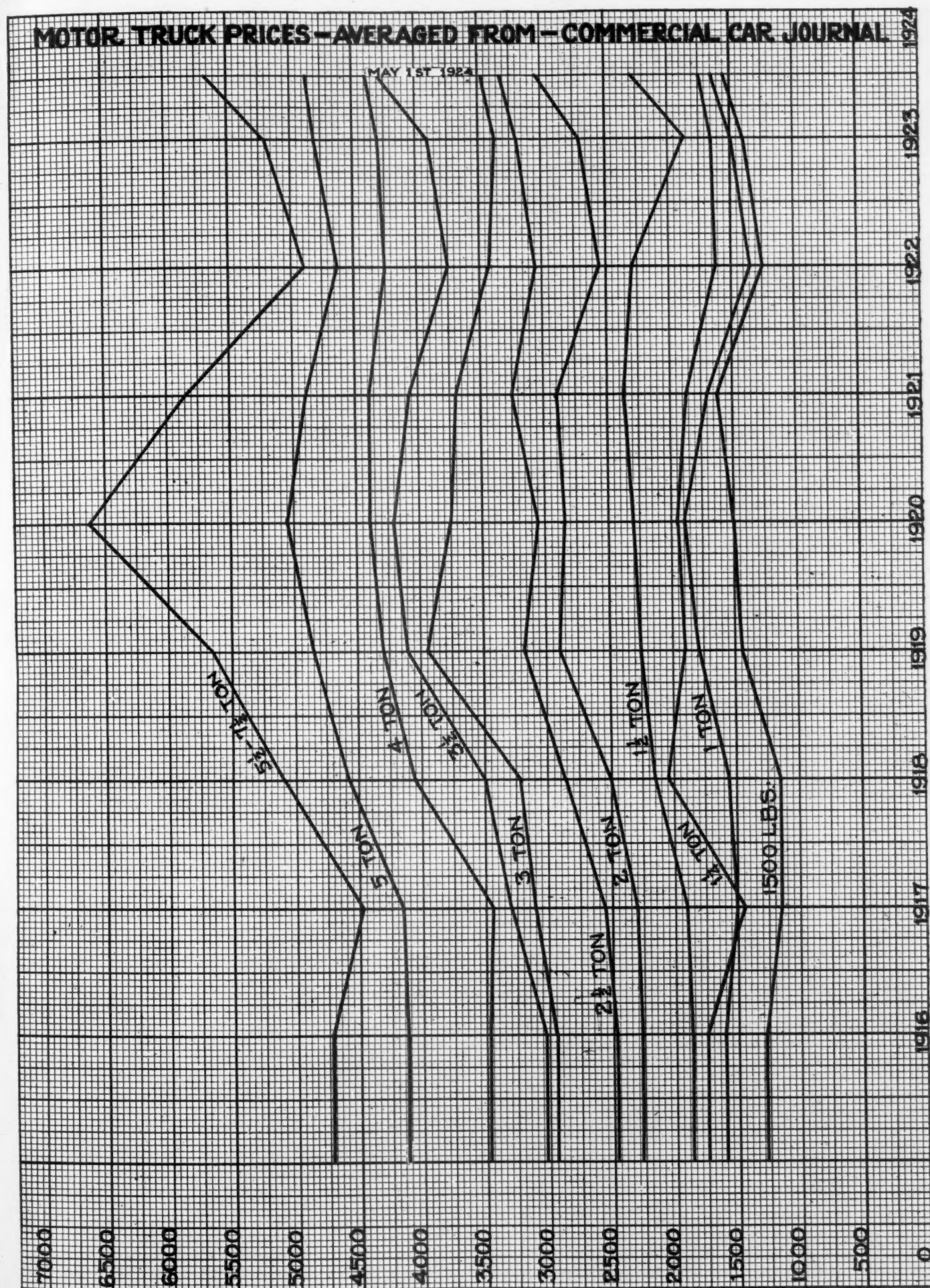
Another angle of sales management was presented by Carlton Proctor of the Buffalo association, whose organization makes up monthly charts of sales in the territory as a whole and for each car the charts show comparative figures for the months of this year and last and are used by the association management in individual conferences with dealers to help them understand better their position in the business of the territory.

From Cincinnati came a story of an association news letter, edited by Man-

ager Harry T. Gardner, which provides dealers and their salesmen with material for sales meetings.

In informal discussions the association managers generally were agreed that the current sales situation emphasizes the need of the most energetic work by manufacturers to help dealers in working out the prevailing overstocks in dealer's hands of a good many makes of cars. The managers believed also that current events have demonstrated that the industry generally has gone too far in creating retail outlets for cars and that persistent efforts should be made to work back to territories that will provide all dealers with reasonable profit opportunities. It was noticeable, however, that none of the managers were looking for a cure of the situation by the manufacturers but realized that this would have to be worked out by the dealers, assisted by their associations and to a greater extent than has prevailed by the manufacturers.

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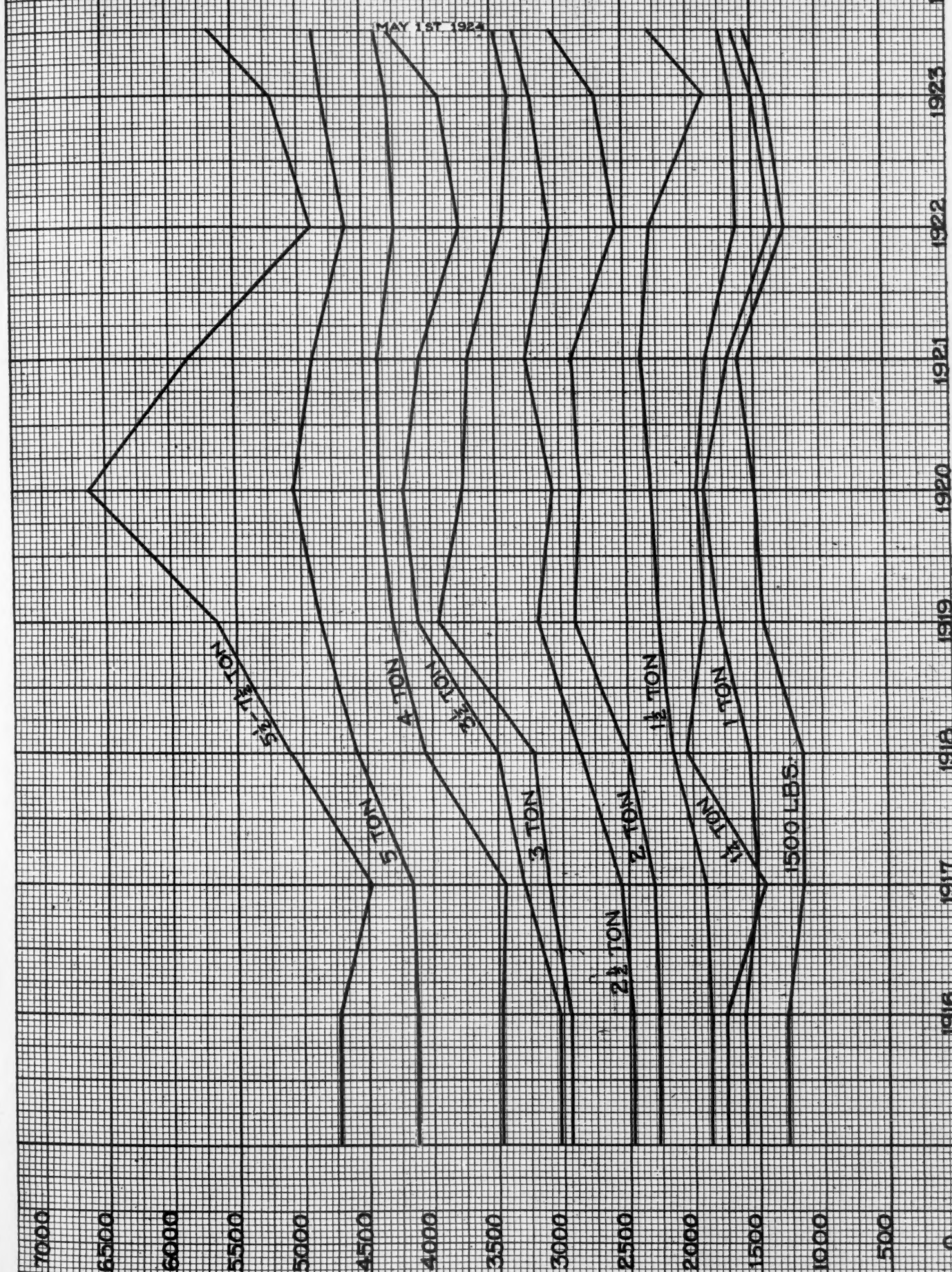
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MOTOR TRUCK PRICES - AVERAGED FROM - COMMERCIAL CAR JOURNAL



(See article on page 14)

The Outlook for the Motor Truck Industry is Most Encouraging!

WHY?

IT is not the purpose of this article to prognosticate the future of the industry but to point out those conditions now existing which have a direct bearing on the continued advancement and prosperity of the industry.

In reviewing the past few years, we must admit that motor truck manufacturers as a class have been up against it. Many have gone out of business or greatly reduced their activities, but those who survived and who are now in a financially healthy state and willing to keep growing along conservative lines, will have nothing to regret. The motor truck industry has turned about face. It is going forward conservatively and with certainty.

The chart on the preceding page tells a story in itself. At the beginning of 1922 prices were at the lowest point, while production was also below what it should have been. During 1921, production ran to 147,550; in 1922, 252,668, and in 1923, 392,760. From 1921 on, production has gained steadily while this year's output promises to greatly exceed last year's figures.

But the most interesting point is that prices are advancing as production is increasing. This is indeed a fortunate state of affairs. It indicates that truck manufacturers have come to realize the folly of trying to build motor trucks **down to a price**, rather than building them on a quality basis at fair prices.

It proves that the motor truck manufacturer is viewing the future of the industry with sane optimism.

This should make it possible for the dealer to more readily convince his customer that the time to buy is now, that prices are gradually increasing and that the **speculative element has been taken out of the business**.

The time has passed when a company or individual can enter the motor truck business with a preconceived notion that it is an easy-money-making proposition. Directly after the war many newcomers rushed into the field with the idea of making a quick clean-up and getting

out. Many did go out, perhaps wiser than when they entered, with the result that much harm was done to the industry particularly in commercial and banking circles.

But the motor truck industry has gone through this purging episode very gracefully. It has awakened to the new order of things. It is giving quality and honest dealing more attention. No, we are not trying to smear it on thick. We realize that there is still some stuff being pulled by some concerns which is not ethical by any means. But eventually those companies will be the losers. The company that is giving its dealers and users a square deal now, need not worry about the future of the motor truck industry. This industry is still in its early stages of development.

We reiterate, "the manufacturers are viewing the future with sane optimism." This means that manufacturers are not letting production get far ahead of them. They are watching the market very closely and are buying material only a few months in advance. They are not piling up a big production of vehicles and then wondering how they are going to sell them. Most manufacturers have discovered that the dealer cannot be forced into taking truck "quotas," and it is therefore very probable that truck demand in the next few months will be a few steps ahead of production.

In other words, the truck industry is becoming stabilized and the tendency towards doing radical things to temporarily stimulate the market are frowned upon.

By this we do not wish to infer that the sales channels are narrowing. On the contrary the market potentialities are increasing.

Only a few years ago the railroads were bitterly opposed to the motor truck. Today the biggest railroads in the country are endorsing them, and a number of lines are now using motor trucks extensively in l.c.l. work.

Electric railway interests are realizing that the motor bus is a life-

saver in many cases and regardless of the attitude of some railway officials toward the bus, it has made remarkable gains during the past year in the passenger-carrying field.

Since the advent of the lighter capacity trucks, much of the ill-advised criticism levied against the motor truck in general, is fast disappearing.

Finally, the surplus war trucks are practically all junked, so that here another thorn in the side of the truck industry has been removed.

The motor truck manufacturer is indeed fortunate in that he is building a product which is indispensable to the development of the community and country. All the necessities of life, the comforts of home, the finished products of the factory, the raw products from the mine are all handled by motor trucks.

City streets are cleaner, food products are delivered under sanitary conditions, the farmers' burden is lightened, Young America in isolated sections is taken to school, big building projects are speeded up, transportation costs are reduced, the common carriers are being benefited, all because the motor truck and bus are making these things possible.

The gradual increase in truck prices indicates that manufacturers are following the trend towards refinements in design and quality, rather than attempting to decrease prices by cheapening their products, for the purpose of artificially stimulating the market. With the increase in demand for motor trucks and buses, which is apparent in most parts of the country, it is logical therefore that dealers should be doing business on a more profitable basis. Every merchant knows that goods are easiest sold on a rising market. Therefore sales resistance in the truck market should be less evident from now on, provided, of course, that the dealer does all in his power to carry on his business on a systematic basis and with convictions that he is in a business that need offer no apologies to anyone.

What Business is Your Passenger Car Prospect In?

Many Passenger Car Owners on Your Prospect List May Need a Motor Truck. Never Neglect to Find Out What Business They Are In

By C. P. SHATTUCK

AUTOMOTIVE statistics show that the majority of transportation units made and sold are of the 1-ton capacity and less. An analysis of the type of dealer handling this capacity truck shows that most of them are passenger car dealers. The majority of these have a truck franchise which is considered apparently as a side line, that is to say, the commercial transportation units are subordinated to passenger cars insofar as sales are concerned. As a result of this attitude of the dealer the passenger car salesman is the truck salesman. Consequently the salesman concentrates on passenger car prospects and picks up orders for trucks.

Gradually, however, more dealers are beginning to visualize and realize the profits to be made by pushing truck sales and **MAKING PROFITS** not only from the sale of the chassis but of the **body and equipment**. Some of these dealers have also realized that greater volume and profits will be attained by training truck salesmen, and some have so co-ordinated the work of the truck and passenger car salesmen that the dealer benefits thereby as well as both classes of salesmen.

For example take the methods employed by the retail branch of the Chevrolet Motor Co., New York City, which is located in a metropolitan section where competition is exceedingly keen and the trade-in very prevalent. Both passenger cars and the 1,000 lb. and 1-ton Chevrolet units are displayed in the showroom. The floor salesmen work under the usual methods of compensation. The territory in which this branch operates is greater New York, which includes Staten Island.

The salesroom occupies a strategic position on Broadway and 57th street, and it is said that 85 per cent of the leads and sales are made in the showroom. The passenger car salesmen when showing a prospect a car, and irrespective of whether or not the prospect is closed, always diplomatically ascertains the business the prospect is engaged in, whether he owns a truck and if so what make and how it is employed. If the prospect appears interested he is introduced to the commercial car sales manager. If not the lead is turned over to the truck department.

The company employs four truck salesmen who operate on the outside, in zoned territory. A lead obtained on the floor is turned over to the proper salesman who follows it up. The sales manager, of course, keeps a record of the lead and at

the end of a certain time if the sale is not made he investigates. The truck salesman is not taken along. The sales manager works alone. The sales manager's call on the prospect is appreciated and it is not difficult for the former to ascertain why the sale was not closed. Very frequently the sales manager closes. By this method he keeps a check on his men and from the remarks of the prospect is enabled to point out to the salesman any weak points in his sales approach. The system is also of advantage as the right kind of a salesman appreciates the co-operation of the executive.

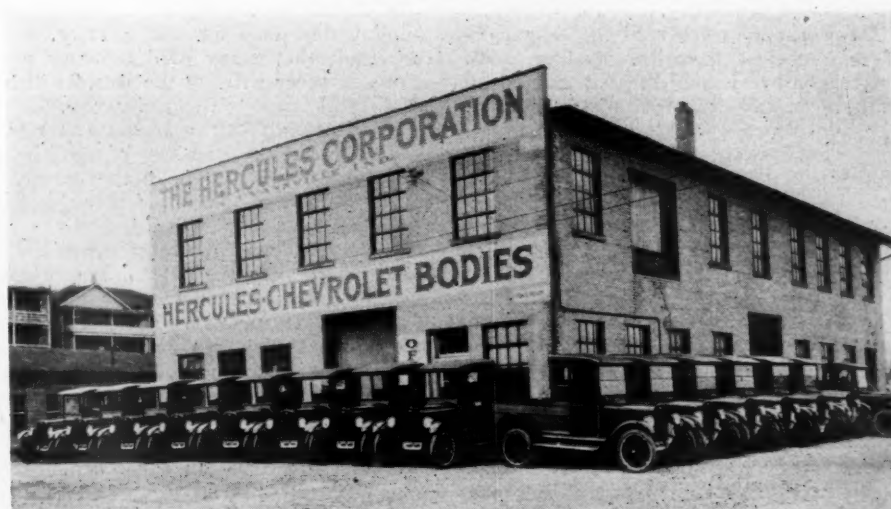
Although the truck salesmen work on the commission plan the car or floor salesman is also compensated. For every lead turned in, either on the floor or outside, which leads to a sale, the car salesman receives a commission. The amount, of course, is deducted from that given the truck salesman. Leads closed by the sales manager are credited to both classes of salesmen where the leads or prospects are entered on the prospect list.

It may be assumed that the truck salesmen will loaf on the job, but such is not the case because being constantly checked up, the sales manager has a pretty good line on the men. With the sales sheet in front of him the sales manager can easily determine the live wires and the dead ones.

The truck salesmen do not rely upon the floor salesmen, or sales manager, to feed prospects. Each salesman is expected to develop his territory, but he is aided. The company has the usual method of compiling lists of truck owners of the light capacity, using the usual registrations and commercial lists.

Consideration is given to seasonal business, as for example the building trades. Considerably ahead of the time when the contractor, mason, plumber, electrician, painter, metal worker, etc., begin their activities, the sales manager plans his campaign. The prospect list is gone over and transportation letters are sent out. The salesmen then follow up. As an example take the radio business. The light delivery truck of the radio jobber and dealer is a common sight on the streets of New York and vicinity these days and it is a seasonal business, starting with the approach of cool weather. Many sales have been made to radio jobbers and dealers.

The real secret of truck selling is to get the lead ahead of the competitor. If the truck dealer waits until the radio dealer or jobber is established in his store and stock in, he will have plenty of competition. But the Chevrolet sales manager does not wait. He obtains the leads in a very simple manner through acquaint-



Consumers Power Company Get First Fleet of Chevrolets With Hercules Bodies

The first large fleet of Chevrolet commercial cars with bodies designed exclusively by the Hercules Corp. for mounting on Chevrolet commercial and utility chassis, has been delivered to the Consumers Power Co., Jackson, Mich. The fleet consisting of 17 cab top express bodies will be used by "trouble shooters." The Hercules corporation, one of the first to develop bodies specifically for the Chevrolet chassis, has now set aside one of its buildings at Evansville, Ind., in which it builds only bodies for Chevrolet. The company has developed 17 commercial body models, four of which are for the 1,500 lb. commercial chassis. The remaining 13 include general delivery, farm utility and automatic or hand-operated steel dump types, for the one-ton utility chassis.

ance with the real estate people. It is a simple matter for any sales manager to cultivate the real estate people. The usual way is to make contact with some young man in the real estate office and make a deal to pay him a commission for any truck or car sale, as a result of a lead. The young real estate man knows when a lease is negotiated or a firm interested in a store so he advises the sales manager. A record is made and the lead is followed promptly. When the sale is made the real estate man is given his commission which is an incentive for him to keep busy. The same plan is employed for passenger car sales. For example, a family comes to New York and leases an apartment. The real estate man gets a pretty good line on the head of the family. Knows if he has a car or is in the market for one. Frequently the man enters some trade and will need a truck. Such leads are live ones and, of

course, are followed up almost immediately.

Of course there is competition because of the trade-in. There are concerns also selling light trucks in New York and live wire dealers BUT—the salesmen of the company mentioned trade only on a sound business basis. When a used truck is bought it is bought at a figure set by the appraiser and if the competitor desires to buy unwisely he is allowed to get the signature on the dotted line. An effort is made, however, to show the prospect by cold figures why \$400 cannot be allowed for a truck not worth \$200. The sales manager of the Chevrolet Company of New York has a quite convincing cost figure story to show the prospect and one that reverses the position of buyer and seller.

The flat-rate service employed by all dealers of the Chevrolet Motor Company is an asset to sales, for the owner knows what any job will cost and when it will

be ready for delivery. The flat-rate plan is universal.

In discussing the sales of trucks with the writer the sales manager brought up the practice of some dealers cutting price on the body or equipment in face of competition to get the sale. He knows, as does every one connected with the truck industry, that this is poor business. The sales manager endeavors to educate his dealers that when they cut, in the trade-in that the competitor will follow suit, and that the see-saw price cutting wipes out the profits.

Generally speaking there is a gross margin of about 73 per cent on the sales of a chassis, body and equipment and because of this some dealers think they can beat the competitor by slashing a price on the body. They fail to take into consideration the overhead and lean months, also the fact that a price cutting war benefits only the purchaser and the sheriff.

The World Needs Roads

Foreign Delegates Place a Lot of Emphasis on the Fact That the Lack of Good Roads is Hindering the Development of the Automotive Vehicle in Their Respective Countries

A BIG chapter in automotive history was written a month ago in Detroit when highway and automotive representatives gathered from every corner of the globe to learn what the automotive vehicle means to America. The World Motor Transport Congress, the first of its kind ever held, gave the foreign visitors a better conception of what the automobile, motor truck, motor bus and taxicab has done to weld this great nation together toward a better understanding of each other's problems, besides producing greater development, comfort and prosperity.

Many papers were read by executives of automotive factories, dealing with practically every subject that related to transportation. The complete program of papers was published in our May issue. Any readers desiring the full text of any of the papers can obtain copies of them from the N. A. C. C. headquarters.

Much of the information given in these papers to foreign visitors was material which is familiar data to the American manufacturer, but it proved the nucleus to promote discussion on the part of the visitors, which is just what the American manufacturers wanted, as it gave them a better insight of what really is necessary to meet the requirements of the foreign automotive market.

The first subject mentioned by practically every foreign representative was "the lack of good roads" and the next, "credits and financing."

The lack of good roads is the limiting factor to the rapid increase of automobile sales in many foreign countries. In some countries the automobile is considered a luxury, and heavy taxation prohibits the use of the passenger car ex-

cept to the wealthy, whereas the motor truck is making headway because it is a necessity. Taken collectively, however, the lack of roads will hinder the rapid expansion of the market for either class of vehicle in many foreign countries.

Many of the delegates expressed themselves to the effect "that as soon as we get a real road building program started the demand for automotive vehicles will be tremendous." In many European countries the roads are still suffering from the destructive influences of the war.

However, the delegates will go back with a definite conception of what road building has done for this country, with the result that many road building programs in other parts of the world will be given more emphatic consideration.

The financing of car stocks and retail sales involves a number of problems which are not met with in the domestic market. On the solution of this also depends the quantity of sales made of American vehicles in foreign countries.

In this country the title of the vehicle remains with the manufacturer until the car is sold. In most foreign countries the title to the vehicle remains in the hands of the manufacturer or bank only as long as the vehicle remains in a bonded warehouse. Just as soon as the vehicle is delivered on the floor of the dealer, all other creditors have an equal lien. The car manufacturer then becomes one of the group of creditors in case the dealer fails. The landlord from whom the dealer rents his establishment usually has prior lien over every other creditor. Thus the American manufacturer finds it rather difficult to regain possession of his car under any circumstances once it has been placed on the dealer's floor.

The necessity for paying tariffs before the car can be delivered to the foreign dealer's establishment still further complicates the matter, because should the dealer fail the manufacturer cannot recover the tariff which he paid, thus putting an added selling cost on every car so recovered and sold in another country.

Several plans were suggested which might help clear up this situation, such as getting the dealers in the various countries together to have the lien laws changed, or sub-leasing a part of the dealer's premises to the American manufacturer at a nominal rental, to give the latter a prior lien against the dealer in case the latter should fail. All of these problems will have to be met, of course, before the market for American cars can be greatly expanded in some European countries.

The motor truck and the bus are developing more rapidly in many countries than the passenger car, particularly in countries where the railway systems are not well developed. In Buenos Aires for instance there were five bus lines in operation January 1923, while 30 lines were operating as of January 1924, giving serious competition to the trolley cars. In Australia about forty buses are being operated today as against two or three a year ago.

The whole problem which the foreign countries are up against is not so much a question of knowledge in road building as it is selling the people on the advantages of building roads. Many of these nations will have to go through the same schooling which this nation went through in the earlier days of the automobile. The first essential of transport means roads. And it means that America must lend a helping hand to the foreign nations.

Profit-Sharing Plan Stimulates Sales

This Concern Handles Both Gas and Electric Trucks



New Home of Stebbins- Roberts- Buquor Co.

AVERAGE sales of 1½ Standard gas trucks a day for a period of four months, and a 50 per cent increase in the sale of C. T. electric trucks during this period, is the accomplishment of the truck department of the Stebbins-Roberts-Buquor Co., of Los Angeles. Back of the establishment of this healthy volume of business is an interesting story of the stimulus given to sales by a definite profit-sharing plan that was instituted by this organization shortly after the first of the year.

Every six months 20 per cent of the net profits of the firm are distributed among the employees. Last year, with no profit-sharing plan in effect, the net profits were about \$40,000. Indications are that this year this figure will be more than doubled. The profits are awarded according to efficiency ratings determined by the employees themselves. Votes are cast by members of the mechanical and sales force every three months to select the most productive and most valuable workers. No man, of course, can vote for himself. The results of these "elections" are taken by officials of the company as a basis in making up the graduated scale of profit awards. Every member of the organization shares in the profits, from the office boy and janitor up through all departments.

"Our profit-sharing plan has not only resulted in a great increase in sales but it has also served to cut down waste to a minimum," says Mr. Buquor. "You will not see any of our equipment parked with the engine running and eating up gas. Today there are only four trucks in our used car department and we expect to move two of them to a prospect tomorrow. We have virtually no credit losses.

"The answer to this healthy situation in our business is very clear to us. Every man knows that the more money we make the more sales we can record at the lowest sales expense consistent with efficiency and the more money he is going to receive. Naturally the members of our repair department or members of other departments are going to literally call the

appraiser on the carpet if he takes in a used truck at a figure that will result in a net loss to the house. The credit manager knows that any losses that are sustained in his department are going to be checked against him when the distribution of profits is made every six months.

"Under our profit-sharing plan, we have developed a most remarkable spirit of co-operation throughout our entire establishment. Every employee is ever on the alert to promote business whenever the opportunity affords. And you will notice that there are no clock-watchers here."

Employees Hold Business Development Meetings

Once a month there is a general meeting of all employees of the Stebbins-Roberts-Buquor Co., where all join in a general discussion on how to develop more business, and to increase operating efficiency. The opinion of every employee is sought. Bill Jones, the mechanic's helper, is given to know that his views are

just as eagerly sought as the star salesman or the officers of the firm.

All new selling features of the equipment handled by the Los Angeles firm are also thoroughly explained at these meetings. The occasion never arises when any member of the organization is stumped for an answer to any question that may be asked concerning a Standard truck or a C. T. electric, whether the question comes to the janitor, the telephone operator, the bookkeeper, the mechanic, the painter or any other employee.

One of the features of the merchandising service of the Los Angeles truck dealer is a transportation department maintained for the benefit of all truck users in Los Angeles. This department not only aids salesmen in cultivating prospects, but it serves owners with equal effect. After a fleet operator purchases equipment from this dealer, he is informed that the firm's transportation department is ready to serve him at any time. Possibly the operator is planning a new gar-



There Are No Longer Any Clock Watchers in the Service Department of Stebbins-Roberts-Buquor Company

Since the profit-sharing plan was instituted by the Los Angeles truck dealer, there has been a substantial increase in efficiency and productivity in every department, and particularly among the mechanics.

age and desires some expert advice on loading platforms, possibly he intends to install some new equipment in his shop and wants some recommendations, possibly he has some routing problems that demand expert analysis—whatever may be his need the transportation department will respond at no charge of any nature.

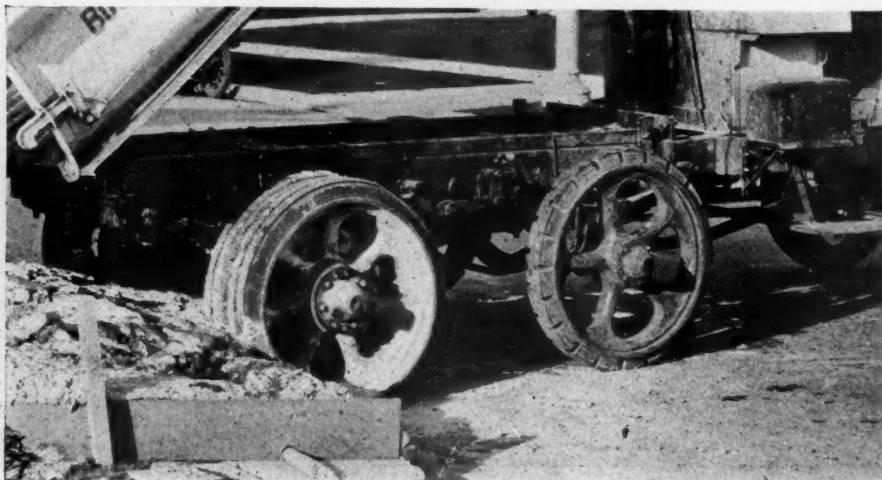
"Any truck dealer who does not maintain in conjunction with his business an efficiently organized transportation department is overlooking positively his greatest sales opportunity," says Mr. Stebbins. "With a transportation department, you can sell transportation; without it, you must sell just trucks."

There are twelve truck salesmen on the force of the Los Angeles dealer. Sales meetings are held at 8 A. M. sharp every morning. Fines are levied against any member of the organization who is late in reaching the sales room.

Each salesman is specially trained to cultivate a particular field. The dealer requires that the salesmen must thoroughly acquaint themselves with all phases of the various businesses in which they are working, so that they can talk intelligently on any subject connected with the conduct of these businesses.

This organization has made a thorough analysis of virtually every field of truck transportation in Los Angeles for the benefit of its salesmen and have obtained some very illuminating figures on the percentage that delivery forms of gross income. The following figures were compiled recently after a study of delivery problems in Los Angeles:

Business	Percentage of Gross Income
Rock and gravel	51.7
Oil	27.7
Brick	26.1
Lumber and Roofing Materials	21.3
Bakeries	19.1
Laundries	17.2
Dairy Products	11.33
Ice	43.2
Coal	27.0
Soft Drinks	24.3
Ice Cream	21.0
Pipe	17.9
Gasoline	13.2



Novel Two-Wheel Equipment Produced by Stebbins-Roberts-Buquor

Seeing the need of a six-wheel equipment for heavy hauling in the Los Angeles territory, the apparatus shown above was patented and produced after several months of experimenting. The total weight of the truck with the Standard six-wheel attachment, ready for the road with a $8\frac{1}{2}$ -yard dump body and hoist, is 11,500 pounds.

"We sell trucks," says Mr. Stebbins, "on the basis that transportation is capable of classification, the same as a marketable commodity, and enters as much into the profits of any business as does the cost of raw materials, manufacturing expenses, wages or overhead."

"For a transportation department of a truck dealer to gain the greatest confidence from truck users, it must have a substantial reason for all of its recommendations. If the department, in studying the problems of a truck owner, does not actually believe there is any logical excuse for a change in the type of equipment, it should not hesitate to so report."

When the new state law of California cut down the maximum weight limit for trucks, Stebbins-Roberts-Buquor Com-



Posting a Parts Bond

In accordance with the policy of the Stebbins-Roberts-Buquor Co., to post a bond guaranteeing the prompt delivery of parts if the customer so desires, H. Y. Stebbins, is shown handing a bond to City Attorney Stevens, of Los Angeles.

pany saw an opportunity to develop a six-wheel truck. After several months of experimenting, the Los Angeles dealer finally produced and patented the additional two-wheel equipment, with the drive affecting the four front wheels. The big advantage of six wheels on heavy hauling duty is declared by Mr. Stebbins to be the spread of the load over the road surface contacts so that a 24,000-pound

capacity can be increased to 34,000 pounds gross, which virtually doubles the carrying and earning capacity, at the same time keeping within the law. The total weight of a truck with the Standard six-wheel attachment, ready for the road, with a $8\frac{1}{2}$ -yard dump body and hoist, is 11,500 pounds.

"Our experience has convinced us that the problem in hauling is not so much a question of sizes of motor trucks, but of the development of a transport that would not do damage to highways and streets," says Mr. Stebbins.

The Los Angeles dealers are selling automotive equipment because they have been quick to recognize sales opportunities; because they have applied a high type of efficiency in their sales methods; and because they offer a tangible, definite service to the owner.

Electric Trucks Exhibited in Joint Display

A most progressive part was played by the electric truck industry at the proceedings of the 47th annual convention of the National Electric Light Association, held May 19 to 23 at Atlantic City, N. J. For the first time the electric truck makers subordinated their individual interests for the common good in telling the story of the use of this type of vehicle by means of a joint exhibit at which the C-T, Walker, Ward, Autocar and Steinmetz vehicles were on display.

Confidence of increased central station co-operation in the sponsoring of electric truck use was expressed on every hand.

In asking for the co-operation of the central stations in fostering the use of the electric truck, the vehicle manufacturers suggest that the central stations employ men who know electric trucks and delivery; include electric trucks in some of advertising, circulars, etc.; be prepared to advise prospects on charging equipment—what they need, about what it will cost, and where they can get it; have an equitable rate.

The Society of Electrical Development brought out a very interesting booklet at convention, entitled "Profitable Off-Peak Business," in which it showed that by fostering the use of electric trucks, central stations could increased their revenue materially during the off-peak hours by utilizing the battery charging load when the plant investment is yielding a minimum return.

During the past year, the electric truck industry has carried on considerable educational work of a very constructive nature. With this work as a foundation, greater strides in marketing of this type of vehicle for short-haul, frequent-stop work will no doubt be made.

Continental Earnings

Earnings for the first six months of the fiscal year of 1924 of the Continental Motors Corporation show an increase of more than 107 per cent over the corresponding period of 1923, according to a bulletin issued by W. R. Angell, vice-president of the company. Earnings for April were about \$500,000 or greater than the earnings for the entire quarter of 1923.

Parts and Service Facilities Given Prior Consideration in Building New Branch

WITH more than 500 Mack trucks in operation in the Detroit territory the Detroit branch of the Mack-International Motor Truck Corp. some time ago outgrew its old quarters, and in consequence a new and modern branch building was recently completed and occupied. The Mack-International company distributes and services its output exclusively through factory branches and sub-branches. The Detroit branch controls most of the lower portion of Michigan and northwestern Ohio, with sub-branches at Flint, Lansing, Saginaw, Grand Rapids, Kalamazoo, Mich., and Toledo, Ohio.

The new branch building in Detroit, with a floor space of 40,000 sq. ft., is one of the finest truck sales and service institutions in the Middle West, and con-

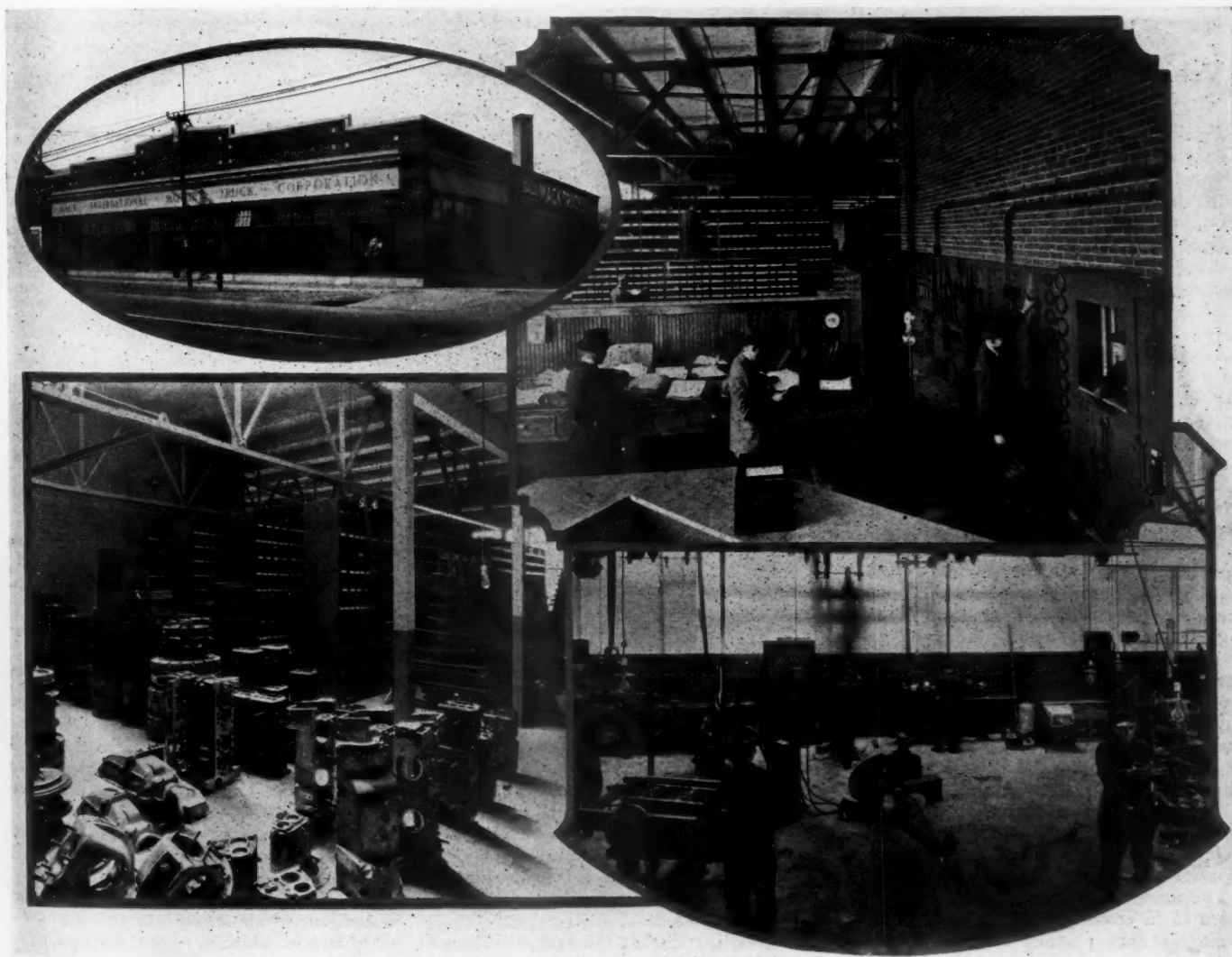
tains many points of interest to truck dealers and service operators everywhere. It is in the center of a block, but the advantages of a corner location have been realized by using a space 30 ft. wide along one side of the building for a side entrance way and outdoor service court.

The entire building was planned exclusively for the handling of trucks, and there is plenty of space in every department for maneuvering the largest vehicles. This is a feature which is sometimes overlooked or slighted in buildings in which both passenger cars and trucks are handled.

Among the departments provided for in the new building are the show room and offices, parts stock room, machine shop, service repair department and new truck storage.

Extending across most of the front of the building is a large show room, simply but tastefully finished, and large enough for the display of three or four trucks. A large parts display board is a feature of this room, and frequently aids in closing a sale. Desks for the salesmen are located along one wall of the show room. General offices and the private offices of branch manager M. H. Anderson and the assistant manager take up the remainder of the front section of the building.

Back of the show room is an unusually large parts stock room, in which an inventory of over \$100,000 worth of parts for all model Mack trucks is carried. The receiving and shipping section of the stock room is located on the side of the building next to the side driveway, so that parts shipments can be handled on



The New Branch of Mack-International Motor Truck Corporation in Detroit

Oval: Exterior view of new Mack branch. The service entrance is on the right side of the building. Upper Right: Receiving and shipping division of parts stock room. The machine tool stock is also located here. Note tool rack and tool check window to machine shop. Lower Left: Another view of the parts stock room. Lower Right: Machine shop, engine, transmission and axle overhaul department

and off trucks direct. This eliminates all trucking of parts through other departments. A customers' lobby, also entered direct from the side driveway, is located immediately back of the stock room, so that customers desiring to buy parts "over the counter" can do so without disturbing other departments.

A drivers' waiting room, adjacent to the customers' lobby, is a feature of this modern branch building. This room is intended for the use of drivers while waiting for delivery of service jobs or for minor adjustments.

Located in an angle of the building, where it is adjacent to both the service repair department and to the parts stock and tool room, is a large machine shop. Here all special machine jobs are handled and complete units such as engines, transmissions and rear axles are overhauled after being removed from the chassis in the service garage.

The general repair department or service garage extends across the entire width of the building and is entered direct from the side driveway or service court. There is ample space in this department for working on 10 or 12 trucks at one time. The shop is well equipped

with benches and heavy floor equipment required for truck service, as well as an overhead track system capable of handling the heaviest units. In one corner of the service shop is a large cleaning tank, big enough to take the largest units. It is located directly under a branch of the overhead track system, and close to the machine shop, so that engines, axles and other heavy units removed for overhaul may be cleaned on the way to the machine shop. A hot soda solution is used for cleaning purposes.

The whole rear portion of the building is given over to storage of new trucks, there being sufficient floor space in this department to accommodate 25 or more vehicles. There are two separate entrances to this section from the side driveway, so that trucks can be placed in or removed from any part of the storage space without disturbing those in other spaces. A large wash rack is located in one corner of the storage garage, adjacent to one of the doors. It is separated from the rest of the storage floor by a concrete wall about two and a half feet high. This prevents splashing of water outside of the wash rack and at the same time does not cut off any light from the rest of the interior.

Along the inner wall of the building and back of the offices are the locker room and wash room for the employees. The wash room is equipped with a shower, a feature greatly appreciated by the men.

At the present time there are 72 employees in the Detroit branch, including sales, office, stock room and service forces. Last year the branch did a business of over \$1,500,000 in sales in the Detroit district alone, while the purchases of parts, materials and factory equipment by the parent company in the Detroit district amounted to slightly over \$2,000,000.

The branch is now equipping a demonstrating truck on one of the lighter model chassis, which is fitted with a removable body on which are displayed many of the important parts of Mack trucks. When desired the body may be removed from the truck and wheeled into the show room, being equipped with casters for this purpose.

Service is heavily stressed in all departments of this branch, and the well equipped service department, ample parts stock, service trucks and other facilities should go far in making sales through better service in the Detroit district.

Vehicular Tunnel an Engineering Feat

According to Ole Singstad, Engineer of Designs, New York State Bridge and Tunnel Commission, and the New Jersey Interstate Bridge and Tunnel Commission, horse-drawn vehicles will not be permitted in the New York-New Jersey tunnel which will be ready for operation by October, 1925.

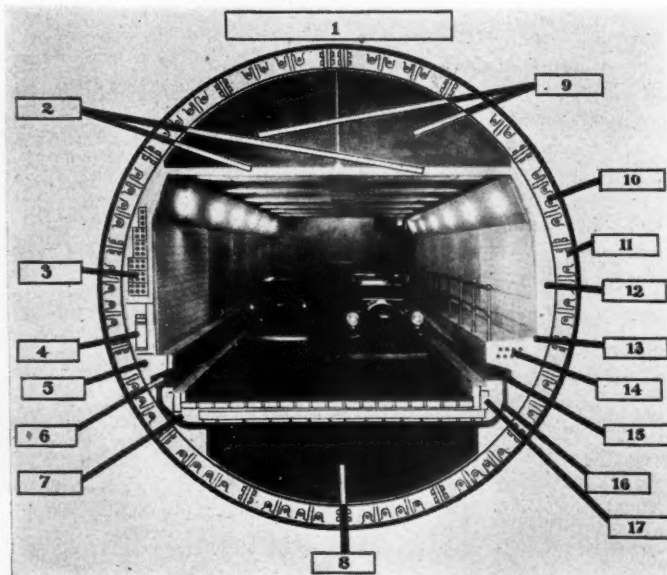
It has been estimated that the safest speed for vehicles operating in the tunnel will be around ten miles per hour. In other words, it will be necessary to set this minimum in order that the people in the vehicles will not be affected by carbon monoxide gases for too great a time. Horse-drawn vehicles, it is figured, will hold up motor vehicle lines and will thereby endanger those enroute through the tunnel.

The elimination of horse vehicles, however, will not arouse much complaint because it has been figured that as each year goes by horse equipment is becoming scarcer than ever. According to statistics taken in 1919, the number of horse-driven vehicles compared with motor vehicles operating over the Hudson River Ferries was a fifty-fifty proposition. Last year's statistics showed that only 30 per cent of the vehicles using the ferries were horse driven.

In designing this tunnel the commission figured on handling one line of vehicles in each direction based on a daily capacity of 46,000 vehicles.

The tunnel is 65 ft. below sea level and has a 15 ft. covering. In designing it the engineers have planned so that the exit and entrance at one side are from different streets, to avoid congestion.

The tunnel is to be 9300 ft. long and it will be possible for 3800 vehicles to pass through hourly in both directions.



verse ventilation; no longitudinal movement of air. 2. Exhaust ports every 15 ft. throughout. 3. Telephone and telegraph cables. Annual income, \$100,000. 4. Fire extinguisher. 5. Water supply pipe. 6. Continuous fresh air supply to roadway. 7. Fresh air flues every 15 ft. throughout. 8. Fresh air duct running through the entire length of the tunnel. 9. Exhaust air duct running through the entire length of the tunnel. 10. Tunnel segment, weight, 3,000 lb. 11. Weight of complete ring, 21.6 tons. 12. Concrete. 13. Sidewalk. 14. Power cables for operation of tunnel. 15. Fresh air expansion chamber. 16. Fresh air flues every fifteen feet throughout. 17. Drain.

In case of breakdowns the tunnel authorities have planned to send special emergency trucks into the tunnel for necessary repairs, etc. It has been figured that a vehicle incapacitated at the middle of the tunnel will not delay the line in back of it more than five minutes under this plan.

It is estimated that the tunnel will cost \$42,000,000, and that it will be paid for in twenty years through the collection of tolls. Were it not for the cost of ventilation, it is figured that the tunnel would pay for itself in eleven years.

The Motor Vehicle; an Inter-State Link

Model of the Hudson River vehicular tunnel, made by the Westinghouse Lamp Co. for the purpose of determining the most efficient lighting system. The model, which is complete in every detail, is on a scale of one inch to one foot. It is 29 in. in dia. and 10 ft. long. Miniature automobiles built in proper scale show exactly what traffic conditions will be, while the lighting units provide the exact illumination intensity proposed. There will be twin tunnels, one for east and one for west-bound traffic, one slow and the other fast moving. The tunnels will each be 9,250 ft. long with a 20 ft. roadway and an over-head clearance of 13 ft. 6 in. The cards and the ribbons the face of the model explain each part of the construction as follows: 1. Ventilation. Air completely renewed 42 times per hour. Trans-

One-half of the operating expenses after the tunnel is completed will be for ventilation.

Over 1700 tests were made by the Bureau of Mines to solve the ventilation problem. Because of the length of the tunnel it was soon seen that the blowing in and out of air would not prove practicable and in addition would no doubt be uncomfortable to vehicle occupants.

The final solution was to supply fresh air through ducts running at the lower part of the tunnel and then exhausting the vitiated air through overhead ducts.



SERVICE AND REPAIR DEPARTMENTS



Is the "Piece-Work" System Practical and Profitable?

AT a recent meeting of the Automotive Service Association of New York, an address was presented on the "piece-work system in service" by William G. Gow, general service manager of the Studebaker Sales Company, Newark, N. J. Included in the audience were service managers of truck dealers in and around New York, and while the subject was treated from the passenger car standpoint in service, the fundamentals are just as applicable to the servicing of trucks.

Just what the piece-work system has accomplished in the service station of this Newark dealer can best be judged from the facts taken from the books of this service station.

The volume of repairs in January, 1924, was 50 per cent greater than a year ago when 66 men were employed against 21 in 1924.

In February, 1924, the increase in production was 146 per cent over the same month a year ago and 24 men were employed as against 64.

The month of March, 1924, saw an increase of 80 per cent in volume over the corresponding month in 1923 with 23 men employed as against 70. Surely these figures supply the answer to the question "is the piece-work system practical and profitable?"

It should be borne in mind that with the piece-work system the mechanic is paid a specified sum for a given operation and he is permitted to accomplish the work in as short or long a time as he pleases. It is a production proposition and the mechanic is paid for each piece of work turned out. If the workman feels "peppy," is skilled, and has the right tools and shop equipment, he will turn out a large amount of work. And he will earn real money. If the mechanic has that tired feeling his daily earnings will necessarily be smaller than when he is working fast. There is no need for a factory system of inspection, because the mechanic knows that if the job comes back, he will do it over again on his own time.

So much for the principles. As to compensation the records of the service station show that the weekly earnings of the mechanics were greatly increased over the flat-rate system and that some mechanics earned as high as \$80 per week.



William G. Gow
Who says piece-work solves the problem of better mechanics

It was also brought out by Mr. Gow that overtime work presented no problems, for the men were glad of any opportunity to increase the contents of the pay envelope.

Many other advantages were apparent with this system. The men were on the job bright and early and every man intent on his work. In place of four foremen there is but one. The accounting or clerical department formerly required nine clerks, now there is but one. The clerical force of the service station, which handles between \$25,000 and \$40,000 volume in service work per month has been reduced to four, namely: 1. The information man and the telephone operator; 2. Estimator and cashier; 3. Billing clerk and assistant cashier; 4. Accountant.

A demonstration of the clerical work with the forms employed was given by these men in connection with the address by Mr. Gow who said that the only drawback to the piece-work system was that the foremen, who are on salary, are handicapped. But this problem will be solved by some form of compensation which will reward the foreman. Mr. Gow said in part:

"One of the greatest difficulties in starting the piece-work system is the necessity of a thorough investigation of the conditions of the estimating system. The operations have to be thoroughly picked apart and operation numbers and letters installed. The proper man to classify these operations is the man who is most familiar with the particular operations, such as engine man to work on engine operations, etc.

Bonus and Guarantee of Weekly Wages

"When we first started work on the system, we had a number of time operation cards printed giving the operation number, estimated time, actual time, etc., and this was carried on for a period of 7 months covering 1886 individual operations. After completing this listing we found that we had so many different operations that we had to split them up into sections, and check back a month or so just to see if we had made any mistakes. Finding that this was fairly well settled, we decided to give the bonus of \$200 to the man making the best average on piecework, paying him on the hourly rate and also guaranteeing him his weekly wages. This proved that we were at least on the right track for production and the men were very eager after finding out what they would make under the piece-work and the hourly rate that the entire shop decided they would at least like to try it with a guarantee of their wages for a week.

"This was satisfactory to us. The first week showed us that the average rate—comparing one month of 1923 on an hourly basis with the same month of 1924 on the piece rate—to be \$27 and the piece rate \$40.50 and the production of the

ACCOUNTING RECORD
SALES COMPANY
E No 4960

INVOICE
E No 4960

THE STUDEBAKER SALES COMPANY
OF NEWARK
E No 4960

ORDER FOR REPAIRS

TO THE STUDEBAKER SALES COMPANY OF NEWARK
You are hereby authorized to make the following repairs to my automobile, supplying the labor, parts and supplies, which are necessary in your judgment to complete the work indicated below.

Signed _____ Date _____

Mr. _____ Address _____ Serial _____ License _____
Model _____ Promised _____ Tester _____
Motor _____

DESCRIPTION OF WORK TO BE DONE

3

2

1

5

4

SHOP FOREMAN'S COPY
E No 4960

Model _____ Serial _____ License _____
Motor _____ Promised _____ Tester _____

INSTRUCTION: Make out from estimate sheet, 1 to cost Dept. 2 to Cashier, 3 to the Tester.

IDENTIFICATION CHECK
E No 4960

PLEASE PRESENT THIS CHECK WHEN CALLING FOR YOUR CAR AND HANDY REFER TO THIS NUMBER IN ORDERING OR INSURING YOUR CAR.

Printed do not telephone between 10 and 12 noon. This is the business hour. We are not responsible for loss by fire or theft. In order to secure prompt service to all our customers, it will be necessary for us to make a storage charge, if car is not called for within 48 hours after notification.

Service Station open 8 to 5:30
Sundays until 12:30
Night Emergency Phone
Stamford 1000

The Order for Work is in Five Sections and is Unique

The sheets are numbered 1 to 5, the first being the service station record which is filed with the complete job. The second sheet, a copy of the first, is the bill for the customer. The third copy goes to the accounting department. Sheets No. 4 and No. 5 are narrower as the amounts are eliminated, and the No. 4, yellow, goes to the shop superintendent for his records. The No. 5 sheet, which is a cardboard, accompanies the car. A detachable stub on this card serves as the identification check.

work showed that we had turned out 15 per cent over 1923. But the next week we had some internal eruptions and it seemed as if everybody had a strong desire to down the piece-work system. Foremen, particularly, made all kinds of excuses and the heads of the departments were dead against the entire thing. So at once we discontinued the piece work for a little more thought and finally after two weeks time we found the trouble to be that the foremen were not co-operating with us due to the fact that some of the men were making more money than the foremen.

Decides on Piece Work

"I called the heads of all department into a conference and advised them that the piece-work system was going into effect regardless of who was trying to stop it and that I would make the necessary changes in the organization to bring this about. I finally decided that the system was wrong because it did not give them a clear understanding of the operations. For instance if a man was getting \$1.50 for removing a crankcase and the pistons, that is all that he would do for that \$1.50 due to an oversight on our part of not putting the complete operation on a

time ticket which at this time read, "remove oil pan, remove pistons and report," which should have read "remove oil pan, dismantle piston, rings and pins and calibrate the same and report."

"We then stopped the entire piece-work system and went back to the hourly rate, and got every man in the organization that could use a typewriter and knew parts and part numbers and operations on compiling information. We investigated every piece-work system that we could and every flat-rate system and with the aid of the members of the Automotive Service Association we visited every service station in the Metropolitan district to get an idea of what they were doing in regard to their operations and piece work if any.

Complete Operation Forms Necessary

"After making this investigation, finally putting all these forms together, we decided the best thing to do was to get the complete operation and install into that operation the amount of money that the customer was to pay, the amount that the mechanic was to receive and the parts that were to be used, and the operation that he was to perform. This resulted in a form known as No. N-17. This proved

very satisfactory after trial, as it took the place of a clerk who made out a parts requisition and we found that it also took the place of a time clerk and also acted as a time slip for the mechanic.

"Having now given you an intimation of some of the hard knocks we got when we first tried to put the system into operation, I will now go on with a specific explanation of how we handle work on the flat-rate and piece-work system. It would only fog up matters to take in a great mass of details so I am going to tell you, step by step, just how one particular operation is handled in our shop. Take, for instance, operation No. N-17 which reads, 'remove oil pan, remove and examine pistons, report and replace,' for this operation the mechanic is paid \$3.25. He measures up the pistons, the block, the rings, removes old gaskets from the pan and cleans the parts. His report is then given to the foreman and an additional order with a list of parts necessary is made out and the customer is notified. The machinist who assembles these parts works with the mechanic and the foreman. The mechanic does not do any machine work such as reaming, drilling or that sort of thing, all such work being done in the machine shop

by the machinist and turned back to the mechanic after they are in a first-class mechanical condition. The machinist receives credit for 1½ hours for this job. The job comes in, N-17. This form is immediately taken out of the rack, no typewriting is necessary, no requisition is necessary and no time ticket necessary.

When the foreman receives this job, he immediately takes the top part of this N-17, tears the perforated line and gives this to the stockman who knows that the parts enumerated on the form are to be issued on the job. The right hand side of this form is to be given to the mechanic who performs the operation. The left side of the form is given to the accounting department who waits for the three forms to return to his office where he checks them up. The fact that the collection of the three forms at the accounting department is notice that the job is entirely completed and this does away with the necessity for the time clerk. The right side of the form is held by the mechanic until he completes the job after which he hands it to his foreman, who O. K.'s it and it then is a warrant for him to draw \$3.25. He saves these up every day till the end of the week and hands them to the accounting department one day before pay day. Our shop order, which is designed to conform with the work, is very simple and does away with two clerks, one clerk making the account-

ing copy, customer's invoice and the shop copy.

Some of the Advantages of Piece Work

It will reduce the cost of performing the work. It will have a tendency to make the mechanics very careful because if the work is rejected back to them they must bear the blunt of this expense. It will create a better overhead, it will give you more space in the shop, it will decrease the amount of men in your shop, it will put more work out in a given time, it will eliminate the disputes of customers, it will eliminate incompetent workmanship, it will do away with loafing, it will prepare your cars for delivery quicker and at a better rate. The mechanic's rate will always increase as to his mechanical ability. His dislike of different operations has been eliminated, he has some incentive to create new tools and new methods. He will work just as well on the hourly rate because he is anxious to get back at his piece work.

The Hourly Rate

We know that every dealer of service organizations in this country has had at some time or another operated some system to change conditions in the service departments. We know the disadvantages of charging the owner under the hourly rate, we know it is impossible to get two men who can produce the work and time alike, we know that they are not interested in anything but Saturday,

which is pay day, and you cannot hold that against them. They are not interested in whether you can clear out your shop often enough to produce results and they find as many excuses for loafing and talking as can be found. A comeback repair job does not mean anything to them and they are not interested in anything but their salary. New tools and new ideas never enter their minds, it is 8 to 5 and 1 hour for dinner they are interested in. The piece-work system, however, which is after all, we believe, the only correct solution of loaning the mechanic to the owner. It has done more for the automobile business in relieving us of the biggest obligation we had to contend with, the bugaboo of this business, **idle time**. The hourly system encourages very loose management, inefficient methods of conducting their business, no incentive for the mechanic, no incentive for the heads of the departments.

Controlling the Shop

"There is not much use of installing the flat-rate piece paid system or any other system that may be of benefit to your business, unless you have entire control over the new car accounts, the shop equipment, the tow car and pick-up wagons and the painting, general repairing and general condition of the entire equipment. To know the amount of money that the business can spend, you must know the ratio of the non-productive and productive

ITEM NO		R.J.O. NO		DATE		N-17 OIL PAN, REMOVE, EXAMINE PISTONS ETC. REPORT AND REPLACE																							
PART	NUMBER	ISSUED	PRICE	COST	1920			1921			1922			1923			1924			1925			1926						
					P	S	L	P	S	L	P	S	L	P	S	L	P	S	L	P	S	L	P	S	L				
Gasket	32635		.39		1	1		1	1		1	1		1	1		1	1											
Gasket	32637		.39		1	1		1	1		1	1		1	1		1	1											
Gasket	43648		.39				2			2			2			2			2										
Gasket	43639		.39				1			1			1			1			1										
Packing	43700		.06				1			1			1			1			1										
Packing	32638		.06		1	1		1	1		1	1		1	1		1	1		1	1								
Packing	16934		.06		1	1		1	1		1	1		1	1		1	1		1	1								
Oil (A17)			.25qt		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8				
Rags			.25lb		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Total cost																													
Mechanic				Filled by				Posted by																					
ITEM NO		RJO		DATE		ITEM NO		RJO		DATE																			
MECHANIC						MECHANIC																							
N-17 OIL PAN, REMOVE, EXAMINE PISTONS ETC., REPORT AND REPLACE												N-17 OIL PAN, REMOVE, EXAMINE PISTONS ETC., REPORT AND REPLACE																	
LABOR												LABOR																	
Customer												Customer																	
L S & B												L S & B																	
9.60 9.60												3.25 3.25																	
PARTS												PARTS																	
Big												Big																	
Spec.												Spec.																	
Light												Light																	
3.13 3.13 3.13 3.13 3.13 3.13 3.13												3.13 3.13 3.13 3.13 3.13 3.13 3.13																	
3.46 3.46 3.46 3.46 3.46 3.46 3.46												3.46 3.46 3.46 3.46 3.46 3.46 3.46																	
FINISHED												FINISHED																	
1 Remove oil pan piston assemblies and 1 main bearing cap.												1 Remove oil pan piston assemblies and 1 main bearing cap.																	
2 Clean parts examine and fill out standard report in full												2 Clean parts examine and fill out standard report in full																	
3 Replace pistons, oil pan, etc. with new gaskets												3 Replace pistons, oil pan, etc. with new gaskets																	

The Combination Time Ticket, a Real Time Saver

This is referred to as operation N-17 in text. The top section of printed form goes to stockroom for requisition for parts and material. The lower right-hand section is given to and retained by mechanic and is his pay ticket. The left-hand lower section goes to the accounting department

Service Built Up This Brake Lining Business

By JAMES W. COTTRELL

A STOCK of brake lining, two brake lining machines, and some real salesmanship have brought to H. Rex McKnight, of Atlantic City, N. J., a worth-while business in brake service. And this trade has been built up in a little over eight months, being an addition to a successful tire sales business.

Mr. McKnight had several years experience in the employ of branch offices of tire manufacturers. In January, 1923, he bought out the Kelly-Springfield dealer's place in Atlantic City. This dealer had not been altogether successful and Mr. McKnight found a number of disgruntled customers.

He started out to give service and satisfaction and built up a name for himself on these points in spite of the fact that it was hard to please some individual customers.

Tire business alone was not enough to make a profitable enterprise, was one of the early conclusions of Mr. McKnight, and other lines were added until now he sells Kelly Tires, Lincoln Shock Absorbers, Monogram Oil, Alemite supplies and service and Raybestos lining and brake service—five lines.

The Raybestos line was taken on in September, 1923. A stock of lining was put in and also the machines for re-lining the brakes. Car and truck owners were told about the new brake service by postal cards sent to a list compiled from the local licenses issued. Another effective way of reaching the owners was by dropping cards in their cars and trucks while parked. Newspaper space was also used to keep the name McKnight linked in

the mind of the public with Raybestos. In all of this publicity the fact that the brakes were to be "Relined by Machinery" was brought out prominently.

Garages and dealer service stations were reached by a personal interview. Mr. McKnight explained that with the machinery he had installed the lining could be put on the bands in a few minutes' time and that no charge was made for this service, provided the lining was bought from him.

Most of the trade business of his section of Atlantic City has come to Mr. McKnight as a result of this service and the salesmanship which put it before his prospective customers. He does the brake lining for many of the automobile dealers, for several truck fleet owners, and individual car owners.

Something of a novelty in brake service is that of relining brakes for elevators. A service station for elevators is right across the street from Mr. McKnight's place and they bring in the brakes to be relined by his men. As the elevator people have the lining, a charge is made for putting the lining in the bands.

In several cases the advantage of applying the lining by machinery has been found out by the request of garage men to Mr. McKnight to do particularly difficult jobs, and in one or two instances to do over again work they had undertaken to do by hand methods.

Beside the wholesale lining service, this establishment gives complete brake service to the individual car owner. This includes adjustment and relining with the necessary dismantling of wheels and brakes.

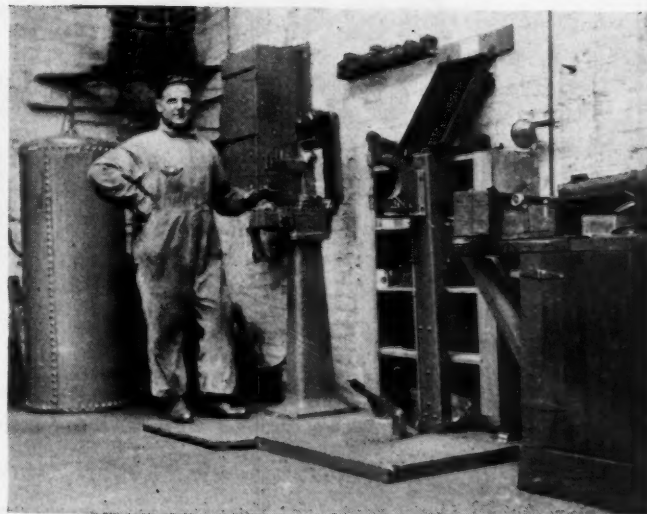
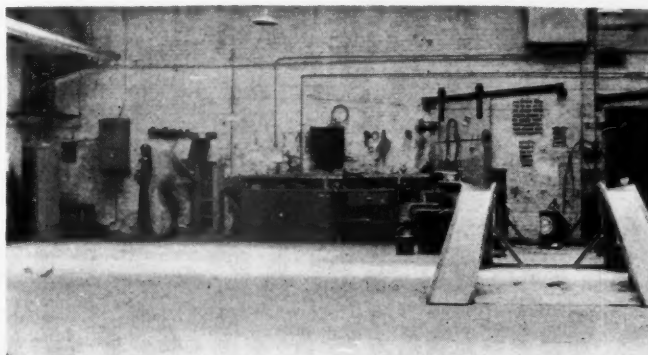
At the time I called at this establishment, Mr. McKnight was out of town and Mrs. McKnight, who is active in the business, gave me information about the enterprise. She said that they have had a wonderful increase in business, in the neighborhood of 75 per cent over the same period last year. The brake service business has not been established long enough for yearly comparisons but it, too, is growing very rapidly.

Mrs. McKnight put particular emphasis on the value of service and good will in their business and told how they had tried to satisfy customers, not by cutting prices and giving "favors" but by serving them. While I was there a garageman from a nearby town came in with several sets of brakes to be relined. A few minutes later a man stopped with a flat tire. Mrs. McKnight explained that there might be a delay of a few minutes as Mr. McKnight was away because of a death in his family and that one man was out fixing a tire.

The waiting garageman volunteered his services and changed the tire. Good will, shown in action rather than words.

"We are building up our business because we give service. I do not say that to brag about ourselves, but it is the truth," was Mrs. McKnight's parting word.

This, no doubt, explains why this establishment has been able to secure such a large volume of brake lining business in a comparatively short time.



Views of the McKnight Establishment at Atlantic City. Note the Grease Rack in the Upper Illustration

Federal introduces the Knight Engine to the Light Truck Field with the Federal-Knight — a truck combining Federal strength of design with the Willys-Knight engine brilliance of performance. The result is a product of certain volume sale. Over five hundred dealers have already asked for contracts to sell this unusual truck.

THE FEDERAL MOTOR TRUCK COMPANY
Detroit, Michigan.



EDITORIALS



Air Cleaners and Oil Dilution

THESE are two very important subjects which will be discussed at the S. A. E. Summer Meeting this month. In the past year many motor trucks have been equipped with air cleaners, it having been definitely proven that much of the cylinder, piston and ring wear is due to the fine particles of road grit entering the combustion chamber and forming an abrasive mixture on cylinder walls. The air cleaner has proven its economy in tractor service and there is no reason why it should not become standard equipment on motor trucks. Any device that will prevent wear within the engine, especially in truck and bus service, cannot be ignored by the far-sighted truck manufacturer. Furthermore, the air cleaner manufacturers should also lose no opportunity in educating the truck dealers on the advantages of such devices.

The oil dilution problem will be considered at this meeting from various angles. The subject will be handled by six speakers and much valuable information is bound to be forthcoming. This is another one of the problems which is of deep interest to the engine manufacturer, especially as it relates to truck and bus service. Much of the bearing wear encountered is due principally to thinned out oil in the crankcase. Elimination of this untimely wear by better lubrication, plus a cleaner mixture, will greatly prolong the time overhauling of the power plant is necessary, all of which helps to cut down the cost of transportation maintenance.

Room in the Service Station

A GREAT deal more care should be exercised in laying out a service station or repair shop to see that vehicles can be driven in and out without causing a jam at the entrance or exit. This subject was forcibly illustrated the other day when the proprietor of a repair shop remarked that he got 60 cents for a part of an ignition device that was put on the car, but that it cost him 75 cents' worth of time getting the vehicle out of his shop. The exit and entrance of the repair shop should always be clear of vehicles. Especially is this im-

portant in shops where one doorway serves both purposes. In many shops a great saving of time can be made if a little thought were given to the arrangement of the work-benches and machinery. Many times large areas are cluttered up unnecessarily by placing the shop machinery at hastily determined points instead of figuring the layout of the machinery on a systematic basis.

The Maintenance Equipment Show

FROM the opening day the Maintenance Equipment Show in Detroit made good. Never has a show been acclaimed so universally satisfactory by the exhibitors as this one. With the doors closed to the public the exhibitors had a real opportunity to discuss their products to better advantage with the visiting service men, shop foremen, engineers and dealer representatives. Being a demonstration affair rather than an excuse to sell something, the visitors had a real opportunity to make comparisons.

The question of holding the show in some other city next year, probably in the east, is now being debated. No doubt a change of locality would be more beneficial both to the exhibitors and to the service men, and it would perhaps be of distinct benefit to the industry to have such a show held in two or three different parts of the country throughout the year. Service has become of such great import to the industry that any exhibition of shop tools and machinery helps to create the desire on the part of the service station proprietor to equip his shop more thoroughly.

A show of this kind is especially beneficial to the small shop owner, as it inspires him to get away from the hammer and chisel idea. The psychological effect of this show cannot be overestimated. Everyone who saw the Detroit show cannot help but realize that the time is here when the repair shop owner who thinks he can get along without modern tools will not be able to compete against the shop that has modern equipment. He won't have the ghost of a chance.

HAVE YOU READ THE ARTICLE ON PAGE 14?

News of the Trade

Conditions of Retail Tire Dealer Greatly Improved

From replies to the questionnaire sent out by the National Automobile Tire Dealers' Association on April 30, conditions among the retailers are improving, for the replies indicate that stock on hand has been decreased, while a large increase in sales is reported. General business conditions, say the retailers, are "about fair."

President George J. Burger is investigating the discrepancy between the survey taken by his association and the Rubber Association of America as to the stock on hand among the retailers on the first of the year. The Dealers' Association investigation showed that its members were carrying approximately 400 tires per dealer, which, multiplied by 60,000, the estimated number of retailers, would indicate 24,000,000 tires on the shelves on Jan. 1. The Rubber Association's estimate, covering a wider area, approximated 12,000,000. President Burger admits that there may be closer to 50,000 dealers than 60,000, so, revising his estimate because of this, he thinks that stock Jan. 1 totaled 20,000,000 casings.

Because of this wide discrepancy, President Burger is urging his members to co-operate with the Rubber Association on the next survey, it being his belief that the larger dealers carrying stocks on hand of 500 tires and up, did not answer the Rubber Association's last questionnaire. President Burger declares if the manufacturers know what dealers are actually carrying, they will be in a better position to govern their production.

Automotive Excise Tax Reduction Effective July 1st

Washington, June 2.—The 1924 tax bill became law today when President Coolidge affixed his signature to it. It becomes operative on July 1, which will mean to the automobile industry that on and after that date purchasers of automobile trucks costing less than \$1,000 will be tax free and that bodies for trucks, costing less than \$200, can be purchased without the payment of the three per cent excise tax. Trucks over \$1,000 are taxed three per cent.

The measure, which carries altogether a reduction of \$25,000,000 for excise taxes collectable from the automobile industry, cuts in half the five per cent tax on tires, tubes automobile accessories and parts, and beginning July 1st, the purchasers of these items will be taxed only 2½ per cent. Automobiles, as heretofore, will be taxed five per cent.

Had the Senate and House conferees permitted the Walsh amendment to the revenue act to stand, which eliminated the entire "nuisance" tax it would have resulted in the saving of an estimated sum of from \$3,000,000 to \$5,000,000 to manufacturers and dealers in their accounting cost, who must make monthly reports to the government of all accessories, tires, tubes and parts sold.

This was one of the contentions made by Senator Walsh, who told the Senate that the collection of the tax would cost the automobile industry in time and money almost as much as the 2½ per cent levy would yield.

Taxes From Automobile and Accessories Show Increase

The substantial increase of \$3,220,177.00 is shown for the month of April, 1924, compared with the corresponding month last year in the automobile, motorcycle, accessories and excise taxes collected by the Federal Government from the automobile industry. The April, 1924, collection was \$12,947,659.31 as compared with \$9,727,482.31 in the same month in 1923.

An increase of \$18,999,320.55 is noted in collections of the manufacturers' excise tax on automobiles, motorcycles, accessories, etc., for the tenth month period beginning July 1, 1923, and ended April 30, 1924. Collections for the period ended April 30, 1924, amounted to \$130,415,958.33, compared with \$111,416,637.78 for the period ended April 30, 1923.

The sums collected from the automobile industry are itemized as follows: Automobile trucks and wagons, in April, 1924, \$1,104,739.70, compared with \$712,805.74 in April last year; automobiles and motorcycles, \$9,510,074.26, contrasted to \$5,620,550.31, and automobile accessories and parts \$2,332,845.35 against \$3,394,126.26.

Attention is again called by Bureau of Internal Revenue officials to the fact that the apparent decrease in sales of accessories, as indicated by the excise tax collected in April of this year, compared with last, is accounted for by the fact that the bureau has changed the classification of a great many accessories, ruling them as non-taxable.

SHOWS

Green Bay, Wis., August 25 to 30, 1924—4th annual show of the Automotive Division of the Green Bay Association of Commerce, Automotive Bldg., Northeastern Wisconsin Fair Grounds (300,000 sq. ft.). Passenger cars, trucks, accessories, sport and auto apparel. W. E. Kerwin, Mgr., Bellin Bldg.

Sacramento, Cal., August 30 to September 7, 1924—70th annual California State Fair, under auspices State Board of Agriculture. Tent 100 x 350. Passenger cars. Trucks, tractors and accessories in other tents. C. W. Paine, Sec.

Toronto, Canada, August 23 to September 6, 1924—National Automobile Show to be held in conjunction with the Canadian National Exhibition under the sanction of the Canadian Automotive Equipment Assn. and the Automotive Industries of Canada. Gib Robertson, Sec.

CONVENTIONS

Alabama Automotive Trades Assn.—Mid-summer meeting to be held July 21 and 22, 1924, at Selma, Ala. J. E. Siegel, chairman, Selma.

Automotive Electric Assn.—Annual meeting to be held September 8 to 11, 1924, at Eaglesmere, Pa., Eaglesmere Park.

American Electric Railway Assn.—43rd annual convention to be held October 6 to 10, 1924, at Young's Million Dollar Pier, Atlantic City, N. J. Also a display of electric cars, buses and accessories. James W. Welsh, exec. sec., 8 W. Fortieth St., New York City.

American Society for Steel Treating—6th annual convention to be held September 22 to 26, 1924, at Boston, Mass. Also a Steel Exhibition.

Coming Events

Automotive Equipment Assn.—Summer meeting to be held June 22 to 27, 1924, at Broadmoor Hotel, Colorado Springs, Colo.

American Society for Testing Materials—27th annual convention to be held June 23 to 27, 1924, at Chalfonte-Haddon Hall, Atlantic City, N. J. C. L. Warwick, sec.

Battery Manufacturers Assn.—Meeting to be held June 20, 1924, at Cedar Point, Ohio.

California Automobile Trade Assn.—Annual meeting to be held in October, 1924. Date and place to be announced later. R. W. Martland, Mgr., Oakland, Cal.

Iowa Automotive Merchants Assn.—Annual meeting to be held November 13 and 14, 1924, at Des Moines, Iowa. A. J. Knapp, Sec.-Mgr.

Michigan Automotive Trade Assn.—18th annual convention to be held in Detroit, Mich., January 21, 1925. W. D. Edendurn, Mgr., Hotel Addison, Detroit.

National Motor Rebuilder and Rebuilders Assn.—Annual meeting to be held June, 1924, Chicago, Ill. Charles H. Hart, Sec., 3848 N. Clark St., Chicago.

National Safety Council—13th annual safety congress to be held September 29 to October 3, 1924, Louisville, Ky. W. H. Cameron, managing director.

National Team and Motor Truck Owners Assn.—Convention to be held June 23 to 25, 1924, at Denver, Colo.

National Tire Dealers Assn.—Annual convention to be held November 18 to 20, 1924. Hosts: Akron Retail Tire & Accessory Dealers Assn.

Pan-American Highway Mission—Pan-American Highway Congress to be held the month of June, 1924, Washington, D. C. **Pennsylvania Automotive Assn.**—Annual convention to be held October 17 and 18, 1924, Wilkes-Barre, Pa. R. C. Duffus, Mgr., 302 Security Bldg., Harrisburg, Pa. **Texas Automotive Dealers Assn.**—Annual convention to be held in March, 1925, at Austin, Texas. W. A. Williams, Mgr., San Antonio.

N. A. D. A. MEETINGS

January 5, 1925—Convention in connection with a show, at Hotel Commodore, New York City.

January 29 and 30, 1925—8th annual convention to be held at Hotel La Salle, Chicago. Lynn M. Shaw, Asst. Gen. Mgr., 320 N. Grand Ave., St. Louis, Mo.

N. A. C. C. MEETINGS

October 21 to 24, 1924—Production meeting at Detroit, Mich.

November 18 and 19, 1924—Joint service meeting with the S. A. E. to be held at Cleveland, Ohio.

S. A. E. MEETINGS

June 24 to 27, 1924—Annual Summer Meeting, at Spring Lake, N. J. C. F. Clarkson, Mgr.

September 24 and 25, 1924—Automotive Transportation Meeting at New York City. **October 22 to 24, 1924**—Production Meeting at Detroit, Mich.

November 18 and 19, 1924—Service Engineering Meeting at Cleveland, Ohio.

January 8, 1925—Annual Dinner to be held at New York City.

January 20 to 23, 1925—Annual Convention at Detroit, Mich.

January 21, 1925—Annual Carnival scheduled for Detroit, Mich.

Larger Electric Test Benches Needed for Bus Work

That the increased use of buses has and will have its effect upon the authorized electrical service station of the equipment manufacturer was brought out at the Spring meeting of the service managers of the electric unit makers in an all-day session recently in the General Motors Building.

It developed that at least a 1½ h. p. motor will be necessary to drive the test equipment for testing bus generators, etc., and it was determined that the makers of test equipment should be advised, also such service stations as were contemplating buying or installing equipment. A motor speed of from 300 to 3000 r. p. m. was recommended. The use of a tachometer of from 300 to 330 r. p. m. was approved.

The discussion of the relation of service to parts resulted in the managers holding that service to the owner should be first, the trade next and that parts and accessories should be a secondary consideration with the service station. That there is need for more intensive selling of service was the unanimous opinion of the meeting.

The committee will meet in September at Eaglesmere Park, Pa., where the A. E. A. meets this year.

A. E. A. Reserve Fund Reaches \$72,000 Mark

Directors of the Automotive Equipment Association in mid-convention session in Detroit, May 21st, were informed by Commissioner Wm. M. Webster that owners of the Coliseum in Chicago, where the association's annual show was held, have purchased the former Grace Church. It will be made a part of the Coliseum, making it possible to stage the next equipment show in November all on one floor. Commissioner Webster also told the board that the association's reserve fund which is to be built up to \$120,000 has now reached the \$72,000 mark and is getting along nicely. This has been accomplished through dues alone and without any special assessments. After the adjournment of the board, the members went to Canada, where they held a similar meeting with a number of Canadian A. E. A. members, both manufacturers and jobbers. Plans were considered to arrange activities that will benefit the Canadian members in the future.

Warning to Car Manufacturers

An alleged automotive publication operating in England has tried to victimize American automobile and motor truck manufacturers recently. Here is the scheme:

The factory is asked to send several photographs for illustrating an article in the magazine. Later a copy of the magazine is sent the factory with the article printed therein. Somewhat later comes a bill to the factory for the "advertising," which, so far as can be learned, is confined to a few copies of the magazine

printed for mailing to victims only. And to make the scheme 100 per cent, the advertiser is later offered a chance to buy the cuts used at "half-price," usually a price several times their actual cost.

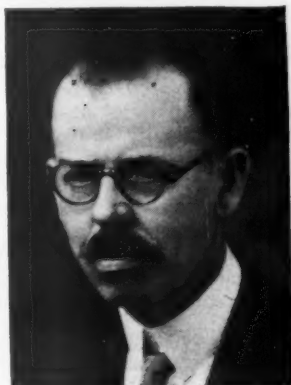
There are several absolutely reputable and trustworthy motor journals printed in England. They are to be commended and render excellent service to the American automobile and motor truck manufacturer. This warning does not in any way apply to them.

But it behooves the American manufacturer to protect himself against unprincipled swindlers who would bleed him in any fake "advertising" scheme.

Don't be caught!

Plans Laid for Formation of More A. E. S. A. Sections

Several new members were added to the Empire State section of the Automotive Electric Service Association at the May meeting held at Buffalo on the 17th. Five equipment manufacturers' representatives were present and three made addresses. J. Lawrence Hill of Rochester was among the speakers and dwelt on the accomplishments of the association.



G. T. McFarland
General Manager Automotive
Electric Service Association

The Ohio section has also been formed and has undertaken a campaign to enlist all of the electric service stations in the state. A big meeting is planned for August 11. Plans are under way to form a New England section, also one in California. This is in keeping with the plan formulated at the annual convention in Chicago last January. The office of general manager G. T. McFarland, will be removed from Trenton, N. J., to New York City this month.

Personnel Reorganization Follows Big Merger

Following the purchase of a substantial interest in the Allyne-Zerk Co., of Cleveland, whereby it became a subsidiary of the Bassick-Alemite Co., of Chicago, there has been a reorganization of personnel of the two organizations whereby E. S. Evans, president of the E. S. Evans Co., of Detroit, one of the Bassick group, is placed in charge of sales of both the Bassick Manufacturing Co., the parent company, and the Allyne-Zerk Co., while E. E. Allyne, president of the Cleveland concern, will supervise production for both Alemite and Allyne-Zerk lubricating systems.

While no changes have been made in the Allyne-Zerk personnel, the resignation of D. F. Fesler, vice-president and general manager of the Bassick Manufacturing Co., has been followed by the promotion of his assistant, J. E. Otis, Jr., to fill the two positions left vacant by the retirement of Mr. Fesler, who will devote his time to other interests. F. A. Hater has been advanced from sales manager to vice-president and general sales manager. Otherwise the old Bassick executives remain as they were.

President E. W. Bassick will be more actively identified with the management than before, while the general direction of the properties will be handled by a committee consisting of Messrs. Bassick, Evans, Allyne and James G. Alexander, vice-president of the Central Trust Co., of Chicago.

Saftee Dump Trucks in Larger Sizes

The Ditwiler Mfg. Co., of Galion, Ohio, makers of the "Saftee" Hand Operated and Automatic Dump Bodies for the Ford chassis, which have been described in previous issues of this publication, announces that it has recently developed the hand operated job for larger trucks up to the size of the Graham Bros. chassis. In fact the job has been developed for all short wheelbase trucks up to two tons capacity.

To Form Shippers Board

Automobile and other shippers located in the Pacific Coast States have been invited by the Car Service Division of the American Railway Association to meet in San Francisco July 11 for the formation of a shippers' regional advisory board.

U. S. Department of Commerce Production Figures
(Number of Machines)

	Passenger Cars			Trucks		
	1922	1923	1924	1922	1923	1924
January	81,696	*223,822	287,302	*9,596	*19,732	*28,922
February	109,171	*254,782	336,373	*13,360	*22,173	*31,151
March	152,962	*319,789	*348,350	*20,036	*35,284	*34,106
April	197,224	*344,661	337,037	*22,665	*38,085	36,102
May	232,462	*350,460	.....	*24,120	*43,730	.....
June	263,053	*337,402	.....	*26,354	*41,173	.....
July	*225,103	*297,371	.....	*22,083	*30,692	.....
August	*249,498	*314,399	.....	*24,711	*30,872	.....
September	*187,711	*298,928	.....	*19,495	*28,578	.....
October	*217,582	335,023	.....	*21,824	*30,139	.....
November	*215,362	284,923	.....	*21,967	*28,073	.....
December	*208,016	275,439	.....	*20,394	*27,762	.....

*Revised.

Bodies Corporation Formed in Kentucky

The Associated Bodies Corp. has been incorporated at Louisville, Ky., with an authorized capital stock of \$1,000,000, divided into 10,000 shares of \$100 each and with the highest amount of indebtedness which the corporation may at any time incur set at \$2,000,000. The corporation will manufacture commercial and bus bodies and also manufacture and distribute, through affiliated companies a line of bumpers, shock absorbers, batteries, tires, etc.

Men of prominence in the industry are numbered among the incorporators, two of them, F. W. Hohensee and W. W. Murphy, being executives of Durant Motors, Inc. The president of the corporation is R. Frank Monroe, formerly president and general manager of the Monroe Body Co. and at present a director and vice-president of the Mengel Co., of this city, manufacturing bodies. D. Claude Harris, vice-president and treasurer, also is a Mengel executive, while J. W. Sliger, vice-president and secretary, is operating manager of the Mengel company.

The general offices and main operations of the Associated Bodies Corp. will be in Louisville, where an assembly and distributing plant will be established at once, to be followed shortly by a large combined manufacturing and assembly plant. Negotiations have practically been closed for a large, well-equipped plant, reasonably near Louisville, having a daily capacity of about 100 commercial bodies and 25 bus bodies daily. This plant already is operating. The annual output is expected to be 20,000 commercial and 2500 bus bodies.

Penn Motors Buys Keystone Motor Truck Corp.

The Penn Motors Corp., 1714 N. Broad St., Philadelphia, Pa., has purchased all the material, parts, jigs, tools and fixtures of the Keystone Motor Truck Corp., of Oaks, Pa., and will carry on all the parts business formerly done by this corporation. This business, which covers Keystone trucks, Hudford and Truxton units, will be carried on in conjunction with all the other truck models of the Penn Motors Corp., which include the Penn Heavy Duty, Pennford 2-ton 3-speed truck and a one-ton commercial car using the standard Overland motor.

Efforts Made to Unravel New England Truck Mixup

At the annual meeting at Holyoke, Mass., May 24, of the Federation of New England Motor Clubs, the delegates passed resolutions calling attention to the warfare between Maine and Massachusetts over commercial vehicles, some of the delegates stating it was un-American and deplorable. It was voted to appoint a committee to draft a real reciprocity law for the six New England States that would do away with the present mixup

which is causing so much trouble and annoyance to merchants, truck owners and drivers.

Maine State Highway officials have been instructed to modify the ban they put upon all commercial vehicles from other States entering Maine. While Maine still insists that trucks from other places must be registered before using the highways, the drivers are now allowed to drive as far as Portland, where there is a branch of the State motor registry and registration plates are available. Heretofore the trucks were stopped anywhere the inspectors saw them causing a hardship on drivers and owners. Massachusetts has therefore allowed Maine trucks to drive as far as Lawrence and Haverhill to be registered instead of being stopped at the border.

Promoting the Truck Membership in N. Y. Association

The Automobile Merchants' Association of New York is at work building up its membership among truck distributors and dealers. Several meetings of truck men have been held recently and a number have joined the association attracted by the credit and employment bureaus and the opportunities for friendship and co-operation among men in the truck end of the business.

Exchange of opinions at these truck meetings has generally shown that sales are running quite strongly in the New York territory considering general business conditions. Sales of most lines are running ahead of last year. The Automobile Merchants' Association is now in charge of Charles F. Rhodes, acting general manager and former assistant general manager.

Research Work on Equipment Business Completed

The Harvard Bureau of Business Research has closed the study of the wholesale automotive equipment business, undertaken at the request and under the auspices of the Automotive Equipment Association and within a few weeks will issue a bulletin summarizing costs, profits and other features of businesses of something like 150 jobbers.

The bureau at the same time is making a survey of the retail tire field and up to date has received 186 statements. This investigation will be held open until about the middle of July.

Great Western Motors Buys Fageol Tractor Division

The Great Western Motors, Inc., of San Jose, Cal., have recently purchased the Fageol Tractor division of the Fageol Motors Company, located at Oakland. The Fageol Tractor under which it will continue to be manufactured over a period of two years, has been increased in price from \$1200 to \$1225.

Philadelphia Motor Truck Association Plans Outing

The Executive Committee for the annual outing and the first annual motor truck parade of the Motor Truck Association of Philadelphia met recently to work out the detailed plan for that double function which will be held on Saturday, June 28.

William Sutherland, chairman of the committee, presided and all of the members present reported that the preliminary announcement of the parade aroused so much interest among the motor truck dealers and owners that a big success was already assured.

The committee discussed plans for the place where the outing is to be held, for which a committee was appointed. They also worked out in detail, plans for decorations, securing a permit for the parade, planning the route and formation for the parade, the method of securing entries, regulations governing the parade, etc.

Mr. Sutherland, the chairman, in speaking of the outlook for a successful parade, said: "I have never been associated with a movement of this kind before in which I found so much general interest displayed, particularly among the older members. We can rest assured that practically every industry in the city using commercial vehicles in any way will be represented in this first parade of the Motor Truck Association."

More Made President of Motor Truck Industries, Inc.

A. S. More, president of Selden Truck Corp., has been elected president of Motor Truck Industries, Inc., succeeding M. L. Pulcher, president of Federal Motor Truck Co., who resigned because of pressure of other business. Mr. More was formerly treasurer of the truck association in which office he is succeeded by Paul Moore of Service Motors, Inc.

The change in officers was made at the directors meeting recently. Four committees were named by directors to perfect and extend the activities of the association. The new committees and their personnel are as follows: Legislative, A. E. Parsons, Paul Moore and T. R. Lippard; show, M. L. Pulcher, O. W. Hayes and L. M. Viles; survey, A. S. More, R. M. Kincaid and J. W. Stevenson; membership and publicity, C. J. Helm, G. W. Yeoman, Fred Glover and E. B. Ross.

It is the plan of the association to co-operate with all truck owner and operator organizations and dealer associations in legislative activity, the new committee to be the agent of the association in promulgating this work. The survey committee will work with dealers in preparing transportation surveys for all forms of truck work. This department of the association will also be open to those who wish definite knowledge on truck performance for all requirements.

Brief Notes on the Commercial Car Industry

C. A. Vane, general manager of the N. A. D. A., announces that the date of the associations' New York convention has been changed from January 7, 1925, to January 5, 1925. * * *

The Fitzjohn Mfg. Co., Muskegon, Mich., now is located in its new factory, manufacturing bus bodies at the rate of two units a day. Another addition, 90 x 200, will be built at once, which will give the company a capacity of 100 complete bus bodies a month. * * *

The Eisemann Magneto Corp., of New York, announces that it has removed its Detroit office from 429 Willis Ave. West to 4145 Cass Ave. * * *

The Mason Motor Truck Co., Flint, Mich., announce the removal of their Philadelphia factory branch to the new location at 228 and 230 North 21st St., which will be the distributing point for Eastern Pennsylvania, Southern New Jersey and Delaware. They will carry at all times approximately 25 to 30 chassis of both the long and short wheelbase type, together with a full supply of the various bodies for the Road King. The branch will be operated as in the past, under the direction of Thos. R. Roberts, Philadelphia branch manager. * * *

A bill authorizing the transfer of \$12,000,000 worth of army trucks and tractors to the Agriculture Department for work on public highways was passed May 21 by the House and sent to the Senate. * * *

New Canadian quarters of North East Service Incorporated have been opened in Toronto at 17 Elm St., under the direction of J. W. Neun, formerly of the Chicago branch. The Windsor branch of the company will be discontinued. * * *

During the past six months the Olds Motor Works, Lansing, Mich., has increased the number of Oldsmobile dealers 65 per cent, has reduced dealer turnover to a negligible amount and bettered the personnel of its selling force, according to Leon Dodge, assistant sales manager. The majority of new dealers have been placed in the rural sections of the country. * * *

Shipments of two-ton and heavy duty trucks for the first two months of the current year have shown a substantial increase over the corresponding period of 1923, according to officials of the General Motors Truck Co. Contractors and road builders have been prominent among purchasers of these and a heavy program of construction and road building throughout the country is indicated. * * *

The large wholesale grocery house of John Sexton & Company, Chicago, has recently placed an order for twenty-six electric trucks with the Commercial Truck Co., of Philadelphia. * * *

D. M. Mason and O. M. Mason, organizers of the Mason Tire & Rubber Co., with plants at Kent and Bedford, Ohio, have resigned as president and treasurer respectively and members of the board of directors. W. A. Cluff, former secretary, succeeds O. M. Mason as president and replaces D. M. Mason as treasurer of the company. Colonel H. P. Shupe, of Cleveland and T. G. Graham, factory manager, have been elected to vacancies on the board. D. M. Mason resigned on account of ill health and O. M. Mason retired on account of growing demands upon his time of other activities. * * *

Republic Truck Co., Inc., Detroit, reports an increase of 43 per cent in business for the first four months of the year as compared to the similar period in 1923. Sales for April were 44 per cent in excess of those for April last year. Increased demand is general, reports E. E. Sieg, general sales manager, and is not confined to any particular section. * * *

Two plants, at Bloomfield, N. J., one occupying 98,400 square feet of floor space on six acres of ground, and the other 174,000 on 14 acres, owned by the General Motors Corp., although never used by it, have been placed on the market by a Newark, N. J., real estate concern. * * *

The Oneida Motor Truck Co., Green Bay, Wis., has changed its name to the Oneida Mfg. Co. following its pending retirement from the truck manufacturing field. It probably will make about 100 trucks this year to fill orders as they come in, after which it will devote its energies to the production of gasoline railroad motor coaches. * * *

The election of officers of the Motor Truck Club of Massachusetts held at its annual meeting this month resulted in the following being chosen: James J. Scully, president; H. Arthur Hall, vice-president; H. Day Baker, secretary-treasurer. L. L. Borden, H. B. Church, John S. Lovering, George H. O'Brien and John H. Smith, board of directors. * * *

Ford retail sales in the United States during the first 10 days of May averaged 8,385 daily, exceeding the last 10-day period of the record-breaking sales month of April. Figures just compiled show a total of 757,021 Ford units retailed to customers from January 1 to May 10, of which car and truck deliveries alone show a gain of 102,158 over the same period a year ago. * * *

The International Harvester branch at Rockford, Ill., is soon to be established in its new motor truck sales room and service station. The opening is planned for June 11th, at which time the company will entertain about 150 of the leading manufacturers of Rockford as well as officials from the home office in Chicago. * * *

H. H. Kelly, statistical expert of the automotive division of the U. S. Department of Commerce, has been appointed assistant chief of the division, succeeding M. H. Hoepli, acting chief, who resigned recently to go with the General Motors Company. Mr. Kelly has for a number of years been engaged in statistical and reportorial work connected with papers in Pittsburgh, Braddock and Wilkinsburg, Pa. He joined the staff of the automotive division of the department on November 1, 1923. * * *

The L. H. Gilmer Co., Philadelphia, known to the automotive industry through the manufacture of fan belts, rebound straps, tire straps, treated fabric for anti-squeak purposes, radiator and hood lacings and transmission linings, has placed on the market \$600,000 worth of first (closed) mortgage 10 year 7 per cent sinking fund gold bonds. The new financing is undertaken to reduce current liabilities and provide additional working capital. * * *

"The Story of Gasoline" is the title of a new three-reel industrial motion picture film just released for public exhibition by the Department of the Interior, through the Bureau of Mines. The film, which was prepared in co-operation with the Standard Oil Co., of Indiana, is designed to make plain to the millions of motorist-gasoline users, the numerous complex processes involved in the production and distribution of its essential product. * * *

Horse and wagon equipment is rapidly being replaced with electric trucks by the Wagner Baking Co., of Detroit, advertised as Michigan's largest bakery. The company has placed an order for 20 C-T electric trucks for immediate delivery. The space formerly occupied by the horse and wagon equipment will be used for manufacturing purposes. * * *

A new concern, to manufacture heavy duty truck bodies, was announced from Buffalo recently. It will be the Macbeth Body Co., and it has already been incorporated under the laws of the state of New York, at a capitalization of \$400,000. Frank W. Buse, a well-known in Buffalo, is the president of the new Macbeth company, the other officers being Edwin J. Spang, A. H. Buse, E. Allen Dunton, and A. S. C. Loepere. * * *

United States and Canadian production of cars and trucks in March reached the high figure of 391,589, being exceeded only by the May, 1923, production. The combined exports of cars and trucks totaled 33,692 or 8.6 per cent of production for the month. Passenger car exports from the United States alone number 14,035, with Australia, Argentina and Japan, the leading markets in the order named. Truck exports from the United States numbered 2,329, compared with 1,704 in February and 1,564 in March, 1923. * * *

Personal Items

P. L. Chase, formerly connected with the Republic Truck Corp., has been placed in charge of the new factory branch which the Mason Motor Truck Co., a Durant subsidiary, has opened in St. Louis.

Frank C. Caldwell, a director of the Link-Belt Co. since the purchase of the H. W. Caldwell & Son Co. by the latter in 1921, is dead of heart failure. Mr. Caldwell was vice-president of the Caldwell company from 1892 to 1908, when he became president, a position which he held until the Link-Belt Company bought the Caldwell company. He also was president of the National Metal Trades Association in 1911-1912 and served as its treasurer from 1912 to 1922.

O. E. Fishburn, formerly experimental engineer with the Warner Gear Co., Muncie, Ind., has become affiliated with the J. W. Murray Mfg. Co., of Detroit.

Samuel Fitzpatrick, who has been export manager for the Columbia Motor Car Co. for a number of years, has resigned to become assistant export manager of the Federal Motor Truck Co., in this capacity, assisting Ward W. Mohun in the development of world markets for Federal products. The promotion of **F. L. Pierce**, sales manager at Federal, to the position of vice-president in charge of sales, also is announced by the Federal company.

Walter P. Hanson, formerly advertising manager of the Haynes Automobile Co. and later holding the same position with the Stutz Motor Car Co., has succeeded J. L. Brownell as advertising manager of the Republic Motor Truck Co. of Alma, Mich.

H. Kelley has become general sales manager of the Stewart Motor Corp. of Buffalo, maker of Stewart trucks. For the past three years Mr. Kelley has been manager of the company's Pittsburgh branch and prior to that he was district manager for several years.

F. Robert Lee has been announced as general sales manager of the Thermoid Rubber Co., Trenton, N. J. He has been associated with the company for some time past in the capacity of assistant sales manager.

L. A. Marre, formerly with the Pullman Co., and H. Shannon Co. of Chicago, has been appointed Chicago representative on the Balcram Bumper line by the Cincinnati Ball Crank Co. In addition to Chicago, Mr. Marre will also cover Milwaukee, Gary, Hammond and northern Illinois.

J. E. Meek, vice-president of Johns-Manville, Inc., died on May 24 at White Sulphur Springs, W. Va., death being attributed to heart disease. Mr. Meek was 60 years of age and had been long prominent in the affairs of the Johns-Manville, Inc. His collapse came a few hours after a round of golf.

C. C. Miner has resigned as president and general manager of the Inland Products Co., Inc., of St. Louis, Mo. Mr. Miner has no plans for the immediate future, but after having been identified with the automotive manufacturing industry for so many years, in all probabilities, he will make some connection that will keep him in that line of work.

Paul J. Moore, chief of the Newark, N. J., Fire Department, has retired from service and will join the Foamite-Childs Corp., of Utica, N. Y., as special representative of that concern's Motor Fire Apparatus Department.

R. E. Olds, chairman of the board of the Reo Motor Car Co., has returned from a 34,000-mile trip around the world, reporting that business in the Orient is bad and that modern automobiles are not found outside of Hongkong and Shanghai, where the foreign population is a big factor. Japan,

he says, is rapidly recovering from the effects of the earthquake.

Frank Page, Commissioner of Highways of North Carolina, has accepted the invitation of Secretary of Commerce Hoover to be chairman of a committee on highway construction and engineering in its relation to safety in traffic in the movement started by Mr. Hoover and a joint committee representing national organizations that are engaged in an effort to co-ordinate measures to improve safety in traffic.

Reed L. Parker, well known to the industry through his connections with prominent agencies handling automotive accounts, has purchased an interest in the Homer McKee agency of Indianapolis and will move immediately from Detroit to the Hoosier metropolis to take up his new work. Mr. Parker is best known as a former executive of the C. C. Winingham agency in Detroit.

David Perlson has been appointed export sales manager of the Stewart Motor Corp., of Buffalo. Prior to this connection, he was for eight years in charge of the automotive department of the export house of Melchior, Armstrong, Dessau Co., Inc., of New York.

D. Minard Shaw, who in 1923 came to New York to take charge of the advertising of the Eastern Division of the Ford Motor Co., has become vice-president of the Jules P. Storm & Sons advertising agency.

C. H. Smith, assistant secretary of the Westinghouse Air Brake Co., and director of clerical operations of all the company's interests, has in addition been elected vice-president of the Westinghouse Union Battery Co., of Swissvale, Pa.

Warren Young Soper, president of the Dunlop Tire & Rubber Goods Co., Limited, Toronto, died Tuesday, May 13th.

James T. Sullivan, automobile editor of the Boston Globe, has been picked to serve as a member of the state public safety committee, appointed to make a study of the problem of making Massachusetts highways safe.

Lewis G. Vogel, vice-president of the Robert Frothingham outdoor advertising agency of Detroit and New York and a prominent figure in the automotive industry, died at Warsaw, N. Y., May 16th. Mr. Vogel was for years on the advertising staff of The Class Journal Co. publications, was publisher of the Light Car, following which he represented several of the leading automobile papers in Detroit, where he had a large circle of friends and acquaintances among the prominent executives in the industry.

Leslie Webb, Jr., has been appointed advertising manager of the Automatic Electrical Devices Co., of Cincinnati, and will direct the advertising not only of the Hom-charger, but also the new Kodol, a portable radio receiver made by the Kodol Manufacturing Co., also of Cincinnati.

William T. White has been elected a director of the Racine Horseshoe Tire Co., succeeding S. Harold Greene, of Boston. This was the only change among the directors chosen at the annual meeting. All the old officers of the company were re-elected.

Literature

Starrett Tools. The L. S. Starrett Co., of Athol, Mass., are distributing their latest catalog No. 23 to dealers. It has over 300 pages and contains detail descriptions of all of the many tools manufactured by this concern. Contained therein are also tables and illustrations showing the best way the various tools can be used.

Ohio Motors are described fully in two of the latest bulletins recently issued by The Ohio Electric & Controller Co., 5900 Maurice Ave., Cleveland, Ohio.

Bonney Chrome Vanadium Wrenches and their story are given thorough attention in the latest catalog issued by the Bonney Forge & Tool Works, Allentown, Pa. The various models made and their adaptability to all makes of cars is also discussed.

"How to Run an Automobile Business at a Profit" is one of System's latest Plan-Book series. This book was compiled with the assistance of 341 automobile dealers who submitted various plans, methods and cost figures of good methods of automobile business management. All details of the automotive business from planning the interior and exterior to direct operating methods are dealt with thoroughly. Plans and charts showing the best kind of cost systems to use, service methods, elimination of wastes, equipment of the shop and the various forms of good advertising are also explained explicitly. A. W. Shaw Co., Cass, Huron and Erie Sts., Chicago.

Mechanical Engineers' Handbook. Second Edition, Lionel S. Marks, editor-in-chief. This is a beautiful red leather volume with gilt-edged and indexed pages. It is an excellent reference book for those interested in engineering. Automobiles, gas, oil engines and electric vehicles are dealt with briefly but thoroughly and accompanied with illustrations. The remainder of the volume is devoted to other forms of engineering. Air compressors, friction, lubrication, hydraulics and many short cut calculating tables are also thoroughly explained and illustrated. The book contains 2000 pages, 4 1/2 x 7 in. in size and contains over 1000 illustrations. McGraw-Hill Book Co., 370 7th Ave., New York City. Price \$6.

"Smithograms," an interesting folder containing interesting shop data especially on shop welding, brazing and repainting, is being distributed monthly by Smith's Inventions, Inc., 2619-33 Fourth St., Minneapolis, Minn.

Universal Battery Co., of Chicago, is issuing several pamphlets to the trade. One of these is a folder entitled "Meeting Battery Conditions." It deals with the cheap and rebuilt batteries and the Quality batteries. Another folder, entitled "Charge for Service," discusses thoroughly the charge for service and free service methods.

Detroit Steel Products Co., Detroit, Mich., is issuing a price list of their entire spring stock. There are listed over 1200 different springs used on 110 different passenger cars and trucks.

"Warehouse Transportation." The General Motors Truck Co., at Pontiac, Mich., is distributing an attractive 32 page pamphlet on Warehouse Transportation. It contains data on the tractor-truck and trailer system of transportation; on selection of bodies, capacity weight tables, operating costs, a base rate table for local and long distance hauling and state legislation, and truck specifications. Moving, hauling and warehouse handling of all classes of storage are also discussed in detail with many illustrations.

"The Electric Motor Truck." Edward E. LaSchum, author, discusses in full, with numerous illustrations, the various electrical units, equipment and internal workings of the popular makes of electric trucks, together with their adaptation to transportation problems. Cost accounting, including specific operating costs, is also dealt with in detail. Various charts, diagrams and tables are given in comparison of the electric trucks to gasoline trucks. For those about to venture in the trucking field, or for personal uses, this book will aid in selecting the proper type of equipment. Truck owners and operators can find much valuable information regarding the particular phases interesting them most. Price, \$4. U. P. C. Book Co., Inc., 239 W. 39th St., New York City.

KEY OF ABBREVIATIONS

Tires:

- §§—Unless marked otherwise all tires are solids.
- Pneumatics standard equipment (tires)
- †—Pneumatics at Extra Cost.
- ‡—Dual on Rear.
- More than one length furnished (wheel-base).

Engine:

- Bud—Buda Co., Harvey, Ill.
- Con—Continental M. Corp., Detroit, Mich.
- D—Head & Side
- GBS—Golden, Belknap & Swartz Co., Detroit, Mich.
- H—Overhead.
- Her—Hercules M. Mfg. Co., Canton, Ohio.
- Hin—Hinkley Motors, Inc., Detroit, Mich.
- H-S—Herschell-Spillman Motor Co., North Tonawanda, N. Y.
- H-C—Holl Scott Motor Co., Berkeley, Cal.
- L—L Head.
- Lyc—Lycoming M. Corp., Williamsport, Pa.
- Mid—Midwest Eng. Co., Indianapolis, Ind.
- FP—Full Pressure to all bearings including wrist pins.
- PC—Pressure to all crankshaft and connecting rod bearings.
- PS—Pressure with splash.
- SP—Circulating splash.
- T—T Head.
- Wau—Waukesha M. Co., Waukesha, Wis.
- Wis—Wisconsin M. Mfg. Co., Milwaukee, Wis.
- Yell—Yellow Sleeve Valve Eng. Works, East Moline, Ill.
- X—Sleeve.

Governor:

- Con—Continental M. Corp., Detroit, Mich.
- Dup—Duplex Eng. Gov. Co., Brooklyn, N. Y.
- Han—Handy Gov. Co., Detroit, Mich.
- Hin—Hinkley Motors, Inc., Detroit, Mich.
- McK—E. R. Klemm, Chicago, Ill.
- Mon—Monarch Gov. Co., Detroit, Mich.
- Non—Not Supplied.
- Pha—Pharo Mfg. Co., Detroit, Mich.
- Pie—Pierce Governor Co., Anderson, Ind.
- Sim—Duplex Eng. Gov. Co., Brooklyn, N. Y.
- Wau—Waukesha M. Co., Waukesha, Wis.

Radiator:

- Bre—Bremer-Tully Mfg. Co., Chicago, Ill.
- Bus—Bush Mfg. Co., Hartford, Conn.
- Cor—Corcoran Mfg. Co., Cincinnati, Ohio.
- Chic—Chicago Mfg. Co., Chicago, Ill.
- EM—English & Mersick Co., New Haven, Conn.
- Fed—Feddars Mfg. Co., Buffalo, N. Y.
- Fla—Flexo Mfg. Co., Los Angeles, Cal.
- G&O—G. & O. Mfg. Co., New Haven, Conn.
- Har—Harrison Rad. Corp., Lockport, N. Y.
- Idl—Ideal Sheet Metal Works, Chicago, Ill.
- Lon—Long Mfg. Co., Detroit, Mich.
- McC—McCord Rad. & Mfg. Co., Detroit, Mich.
- McK—McKinnon Dash Co., Buffalo, N. Y.
- Per—Racine Radiator Co., Racine, Wis.
- R-T—Rome-Turney Rad. Co., Rome, N. Y.
- S-J—Shotwell Johnson Co., Minneapolis, Minn.
- Spl—Splittorf Electrical Co., Newark, N. J.
- Stn—Standard Radiator Co., Inc., Springfield, N. Y.
- US—U. S. Cartridge Co., Lowell, Mass.
- Whe—Wheeler Rad. & Mfg. Co., E. Cleveland, Ohio.

Fuel System:

- Car—Carter Carburetor Co., St. Louis, Mo.
- Ens—Ensign Car. Co., Los Angeles, Cal.
- G—Gravity.
- Hol—Holley Carburetor Co., St. Louis, Mo.
- Joh—Johnson Co., Detroit, Mich.
- Mar—Marvel Carburetor Co., Flint, Mich.
- P—Pressure.
- Ray—Beneke & Korpff Mfg. Co., Chicago, Ill.
- Sec—Briscoe Devices Corp., Pontiac, Mich.
- She—Wheeler Schebler Carburetor Co., Indianapolis, Ind.
- Ste—Detroit Lubricator Co., Detroit, Mich.
- Str—Stromberg Motor Devices Co., Chicago, Ill.
- Til—Tillotson Mfg. Co., Toledo, Ohio.
- V—Vacuum.
- Zen—Zenith-Detroit Corp., Detroit, Mich.

Electrical System:

- †—Generator & Starter at Extra Cost.
- †—Starter not Supplied, Generator at Extra Cost.
- A-C—Allis Chalmers Mfg. Co., Milwaukee, Wis.
- APo—Apollo Magneto Corp., Apollo, Pa.
- A-K—Atwater Kent Mfg. Co., Phila., Pa.
- A-L—Electric Auto-Lite Corp., Toledo, O.

- Ber—Ericsson Mfg. Co., Buffalo, N. Y.
- Bij—Bijur Motor Appliance Co., Hoboken, N. J.
- Bos—American Bosch Magneto Co., Springfield, Mass.
- Con—Connecticut Telephone & Electric Co., Meriden, Conn.
- Del—Dayton Engin. Lab. Co., Dayton, Ohio.
- Dyn—Owen Dyneto Corp., Syracuse, N. Y.
- Eis—Eisemann Magneto Corp., Brooklyn, G.D.—Gray & Davis, Boston, Mass.
- Kin—Kokomo Electric Co., Kokomo, Ind.
- K-W—K W Ignition Co., Cleveland, Ohio.
- L-N—Leece-Neville Co., Cleveland, O.
- N-E—North East Elec. Co., Rochester, N. Y.
- Non—Not Supplied.
- POL—Prest-O-Lite Co., Inc., Indianapolis, Ind.
- Rem—Remy Electric Co., Anderson, Ind.
- RBo—Robert Bosch Magneto Co., New York, N. Y.
- Sim—Simms Magneto Co., E. Orange, N. J.
- Spl—Splittorf Electrical Co., Newark, N. J.
- Wag—Wagner Elec. Mfg. Co., St. Louis, Mo.
- Wes—Westinghouse Elec. & Mfg. Co., Springfield, Mass.
- USL—U. S. Light & Heat Corp., Niagara Falls, N. Y.

Clutch & Gearset:

- A—Amidships.
- B & B—Borg & Beck Co., Chicago, Ill.
- B-L—Brown-Lipe Gear Co., Syracuse, N. Y.
- Cot—Cotta Transmission Corp., Rockford, Ill.
- Cov—Cover Gear Co., Lockport, N. Y.
- Det—A. J. Detlaff Co., Detroit, Mich.
- D-G—Detroit Gear & Machine Co., Detroit, Mich.
- Dod—Dodge Brothers Co., Detroit, Mich.
- D—Disk.
- Dun—Dundore Mfg. Co., Reading, Pa.
- Durs—Durstion Gear Corp., Syracuse, N. Y.
- Ful—Fuller & Sons Mfg. Co., Kalamazoo, Mich.
- G-L—Grant Lee Gear Corp., Cleveland, O.
- Har—Hartford Auto Parts Corp., Hartford, Conn.
- Hoo—Hoosier Clutch Co., Muncie, Ind.
- J—Unit with Jackshaft.
- K—Cone.
- M-E—Merchant & Evans Co., Phila., Pa.
- M-M—Mechanics Mach. Co., Rockford, Ill.
- Mun—Muncie Gear Works, Muncie, Ind.
- O—Disk in Oil.
- P—Plate.
- R—Rear Axle.
- U—Unit with Engine.
- W-G—Warner Gear Co., Muncie, Ind.

Universal:

- Blo—Blood-Bro. Mach. Co., Allegan, Mich.
- Det—Universal Products Co., Detroit, Mich.
- Har—Hartford Auto Parts Corp., Hartford, Conn.
- M-M—Mechanics Machine Co., Rockford, Ill.
- M-E—Merchant & Evans Co., Phila., Pa.
- Pet—Cleveland Universal Parts Co., Cleveland, Ohio.
- Pic—Carl Pick Co., West Bend, Wis.
- Sne—Snead & Co., Jersey City, N. J.
- Spl—Spicer Mfg. Corp., S. Plainfield, N. J.
- The—Thermoid Rubber Co., Trenton, N. J.
- U-M—Universal Machine Co., Bowling Green, Ohio.
- U-P—Universal Products Co., Detroit, Mich.

Front and Rear Axles:

- 1/4—Semi-Floating.
- 3/4—Three-Quarter Floating.
- Atl—Atlas Axle Co., Wilmington, Del.
- Clc—Clark Equip. Co., Buchanan, Mich.
- Col—Columbia Axle Co., Cleveland, O.
- Con—Continental Axle Co., Edgerton, Wis.
- C—Chain.
- B—Straight Bevel.
- D—Dead.
- Eat—Eaton Axle Co., Cleveland, Ohio.
- Flt—Flint Motor Axle Co., Flint, Mich.
- F—Floating.
- Huc—Huck Axle Co., Chicago, Ill.
- I—Internal Gear.
- LM—L. M. Axle Co., Cleveland, Ohio.
- P—Spur Gear.
- R—Double Reduction.
- Rus—Russell Motor Axle Co., Detroit, Mich.
- S—Spiral Bevel.
- Sal—Salisbury Axle Co., Jamestown, N. Y.
- She—Sheldon Axle & Spring Co., Wilkes-Barre, Pa.
- Shu—Shuler Axle Co., Inc., Louisville, Ky.
- Std—Standard Parts Co., Cleveland, O.
- Tim—Timken Detroit Axle Co., Detroit, Mich.

- Tor—Eaton Axle & Spring Co., Cleveland, Ohio.
- Vul—Vulcan Motor Axle Co.
- Wal—Walker Axle Co., Chicago, Ill.
- W—Worm.
- Wis—Wisconsin Parts Co., Oshkosh, Wis.

Brake:

- A—Rear Wheels only.
- B—Drive Shaft and Rear Wheels.
- C—Front and Rear Wheel.
- D—Jackshaft and Rear Wheels.

Springs:

- Am—American Auto Parts Co., Detroit, Mich.
- Arm—General Motors Co., Pontiac, Mich.
- Bea—Beans Spring Co., Inc., Massillon, O.
- Bet—Betts Bros. Sp. Co., Inc., San Francisco, Cal.
- Cha—Champion Auto Sp. Co., St. Louis, Mo.
- Del—D. Delany & Son, Newark, N. J.
- Det—Detroit Steel Prod. Co., Detroit, Mich.
- G-C—Garden City Sp. Works, Chicago, Ill.
- Har—Harvey Sp. & Forging Co., Racine, Wis.
- I-C—Iron City Spring Co., Pittsburgh, Pa.
- Lig—Liggett Sp. & Axle Co., Monongahela, Pa.
- Mar—Maremont Mfg. Co., Chicago, Ill.
- Mat—Mather Spring Co., Toledo, O.
- Mer—E. R. Merrill Spring Co., New York.
- Pen—Penn Sp. Works, Baldwinville, N. Y.
- Per—Perfection Sp. Co., Cleveland, O.
- Phi—Phila. Sp. Works, Phila., Pa.
- P.S.—Point Sp. Co., Pittsburgh, Pa.
- S.S.—Standard Steel Sp. Co., Coraopolis, Pa.
- Ste—Sterling Spring Co., Pittsburgh, Pa.
- Tem—Temme Sp. Corp., Chicago, Ill.
- Tut—Tuthill Sp. Co., Chicago, Ill.
- U.S.—United States Sp. Co., Los Angeles, Cal.
- Vul—Jenkins Vulc. Sp. Co., Richmond, Ind.

Steering Gear:

- CAS—C. A. S. Products Co., Columbus, O.
- Dit—Ditwiler Mfg. Co., Gallon, Ohio.
- Dod—Dodge Bros. Co., Detroit, Mich.
- Gem—Gemmer Mfg. Co., Detroit, Mich.
- Jac—Saginaw Products Co., Saginaw, Mich.
- Lav—Lavine Gear Co., Milwaukee, Wis.
- M-P—Muncie Gear Works Corp., Muncie, Ind.
- Ros—Ross Gear & Tool Co., Lafayette, Ind.
- Sag—Saginaw Products Co., Saginaw, Mich.
- Woh—Wohlrab Gear Co., Racine, Wis.

Wheels:

- Arc—Archibald Wheel Co., Lawrence, Mass.
- A-W—Auto Wheel Co., Lansing, Mich.
- Bim—Bimel Spoke & Auto Wheel Co., Portland, Ind.
- Bud—Budd Wheel Co., Phila., Pa.
- Clc—Clark Equip. Co., Buchanan, Mich.
- Day—Dayton Steel Foundry Co., Dayton, Ohio.
- Det—Detroit Panel & Plywood Co., Detroit, Mich.
- Dis—Disteel Wheel Corp., Detroit, Mich.
- Hay—Hayes Wheel Co., Jackson, Mich.
- Hoo—Hoopes, Bro. & Darlington, Inc., West Chester, Pa.
- Ind—Indestructible Wheel Co., Lebanon, Ind.
- Jon—Jones, Phineas & Co., Newark, N. J.
- Kel—Kelsey Wheel Co., Detroit, Mich.
- MM—Michigan Malleable Iron Co., Detroit.
- Mot—Motor Wheel Corp., Lansing, Mich.
- Mun—Muncie Wheel Co., Muncie, Ind.
- Nor—Northern Wheel Corp., Alma, Mich.
- Pru—Prudden Wheel Co., Lansing, Mich.
- Roy—Royer Wheel Co., Aurora, Ind.
- Sch—Schwarz Wheel Co., Phila., Pa.
- Smi—Smith Wheel, Inc., Syracuse, N. Y.
- StM—St. Marys Wheel Co., St. Marys, O.
- Std—Standard Wheel Co., Terre Haute, Ind.
- Van—Van Wheel Corp., Oneida, N. Y.
- Wal—Walker Axle Co., Chicago, Ill.
- Way—Wayne Wheel Co., Newark, N. Y.
- Whit—Whitcomb Wheel Co., Kenosha, Wis.

Rim Equipment:

- Fir—Firestone Steel Products Co., Akron, Ohio.
- Gdy—Goodyear Tire & Rub. Co., Akron, Ohio.
- Hay—Hayes Wheel Co., Jackson, Mich.
- Jax—Jaxon Steel Prod. Co., Jackson, Mich.
- Kel—Kelsey Wheel Co., Detroit, Mich.
- Mil—Miller Rubber Co., Akron, Ohio.
- Non—None Supplied.

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

Those Chassis Which Are Sold and Recommended for Passenger Transportation Are Designated in the Following Table by Reference Sign (\$) in Front of the Name For Specially Designed Motor Bus Chassis See Pages 44 and 45

See Table for Replacement Data. Truck Frame Dimensions Are Included in Same Table (Where prices are not given it is because we have been unable to get them from authoritative sources)

For full name and address of manufacturer and information regarding complete line see page 43 For full name and address of manufacturer and information regarding complete line see page 43

Trade Name and Model	General			Engine						Electrical System		Clutch	Rear Axle		Gear Ratios		Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)					
	Tire Size §§		Standard Wheelbase (inches)	Make and Model	Bore and Stroke (inches)	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiators (Make)	Fuel System		Location	No. of Forward Speeds	Universals (Make)	Make and Model							Type	Total Reduction in		Brakes, Location	
	Front (inches)	Rear (inches)									Carburetor (Make)													Ignition System (Make)	Generator and Starter (Make)		High	Low
1000 Pounds																											
Chevrolet Sup. LD...	395	103	30x3½°	30x3½°	30x3½°	Own...	3Hx4	21.7	H	PS	Non	Har	Zen	Rem	U	3	Own	Own Sup	K	3.77	12.5	Own Sup	S.S.	Own	Hay	Jax	1390
Gray O...	420	100	30x3½°	30x3½°	30x3½°	Own 0	3½x4	21.0	L	PS	Non	Har	Zen	Rem	U	3	Own	Own Sup	P	3.90	13.1	Own 91	Det	Own	Hay	Tim	1130
Overland... 81...	395	100	30x3½°	30x3½°	30x3½°	Own 91	3½x4	19.6	L	PC	Non	Har	Zen	Rem	U	3	Own	Own 91	P	4.50	17.6	Own 91	Own	Own	Hay	Hay	1550
1500 Pounds																											
Corbett S...	1300	130	34x4½°	34x4½°	34x4½°	H-S 30	3½x5	19.8	L	PS	Non	McC	Str	Rem	U	3	Spi	She W1002	D	6.00	20.0	She 33FA	She	Ros	Bim	Fir	3420
Diamond T75...	130		33x5°	33x5°	33x5°	Her OX	4x5	25.6	L	PC	Non	G&O	Zen	Rem	U	3	Spi	Col 52000	D	5.12	18.5	Col 5000	Mat	Gen	Hay	Fir	2825
Dodge Bros...	730	116	32x4°	32x4°	32x4°	Own 4	3½x4½	24.0	L	SP	Non	McC	Ste	Rem	U	3	Own	Own 4	S	4.54	18.9	Own 4	Own	Own	Kel	Hay	1992
Perfection A...	1245	128	32x4½°	32x4½°	32x4½°	Con N	3½x5	22.5	L	PS	Non	Own	Zen	Rem	U	3	The	Tim 5311	P	5.00	22.3	Tim 1216	Own	Lav	Bim	Tim	2600
Rainier... R-31...	1970	125	35x5°	35x5°	35x5°	Con N	3½x5	22.5	L	PS	Non	Own	Zen	Rem	U	3	Har	Tim 6250	B	6.75	22.5	Tim 1250	Per	Lav	Jon	Fir	2800
Ruggles 16...	122		32x4½°	32x4½°	32x4½°	H-S 30	3½x5	19.6	L	PS	Non	Har	Zen	Rem	U	3	Spi	Col 3000	B	5.81	19.7	Col 3000	Det	Jac	Nor	Fir	2800
White 16...	2400	133½	34x5°	34x5°	34x5°	Own GK	3½x5½	22.5	L	SP	Non	Own	Zen	Rem	U	3	Own	Own 15	B	5.36	18.6	Own 15	Mat	Gen	Std	Fir	3225
Yellow Cab M-22...	1560	117	33x4½°	33x4½°	33x4½°	Con V-4	3½x5	22.5	L	PC	Non	Lon	Zen	Rem	U	3	Spi	Tim	B-L	4.90	16.3	Tim	Mat	Gen	Std	Fir	2400
1 Ton																											
Autocar 207...	186		34x5°	34x5°	34x5°	Con 8R	3½x5½	27.3	L	PC	Non	G&O	Zen	Rem	U	3	Blo	Tim 9258	P	6.25	30.0	Tim 1452	Det	Ros	Bim	Fir	3500
Autocar 207...	2200	97	34x5½	34x5½	34x5½	Own 2	4x5½	18.1	L	SP	Non	Own	Str	Rem	U	3	Spi	Own F	P	8.30	38.2	Own F	Det	Ros	Hoo	Fir	3800
Autocar 207...	2300	180	34x5½	34x5½	34x5½	Own 2	4x5½	18.1	L	SP	Non	Own	Str	Rem	U	3	Spi	Own G	P	8.30	38.2	Own G	Det	Ros	Hoo	Fir	3800
Bessemer G...	124		35x5°	35x5°	35x5°	Own KN	3½x5	22.5	L	PS	Non	Str	Zen	Rem	U	3	Blo	Tim 1000	P	6.86	18.8	She 800	Per	Ros	Sch	Fir	3000
Bethlehem KN...	1565	140	35x5°	35x5°	35x5°	Own J-3	3½x5	22.5	L	PC	Non	G&O	Zen	Rem	U	3	Spi	Tim 6852	P	6.86	18.8	Tim 780	Mat	Ros	Hay	Fir	2650
Bethlehem E-3...	1850	140	35x5°	35x5°	35x5°	Wls SU	4x5	25.6	L	PC	Non	G&O	Zen	Rem	U	3	Spi	Col 52024	P	6.13	20.5	Col 5089	Mar	Ros	Hay	Fir	2900
Brockway E-3...	1700	130	34x5½	34x5½	34x5½	Bud WTU	3½x5½	23.4	L	PC	Non	G&O	Zen	Rem	U	3	Spi	Col 52000	S	5.85	23.4	Col 5000	Sta	Woh	Arc	Fir	3200
Caseo A...	468	120	31x4°	31x4°	31x4°	Own WTU	3½x4	23.4	L	PC	Non	G&O	Zen	Rem	U	3	Own	Own Sup	S	5.43	18.1	Col 5000	S.S.	Woh	Hay	Jax	1830
Chevrolet Sup...	127		34x5°	34x5°	34x5°	Bud GBU	3½x5	22.5	L	SP	Non	Own	Zen	Rem	U	3	U-M	Sal 1415	B	6.86	23.4	Sal 1415	Amc	Jac	Sml	Fir	3530
Commercia 11...	135		30x6°	30x6°	30x6°	Con N	4x5½	22.5	L	PC	Non	Own	Zen	Rem	U	3	Spi	Tim 1452	B	6.86	23.4	Tim 1452	Amc	Jac	Sml	Fir	3900
Concord E...	1600	130	34x3½°	34x3½°	34x3½°	Con N	3½x5	22.5	L	PS	Non	McC	Str	Rem	U	3	Spi	Tim 1452	B	7.80	25.9	Tim 1452	She	Ros	Bim	Fir	3730
Corbett E...	1115		34x4½°	34x4½°	34x4½°	Con N	3½x5	22.5	L	PS	Non	Per	Zen	Rem	U	3	Spi	She W1501	D	7.80	25.9	Sal 1455	She	Ros	Bim	Fir	2400
Diehl A...	1695	138	34x4½°	34x4½°	34x4½°	Mid 408	3½x5	19.6	L	PS	Non	McC	Str	Rem	U	3	Har	Tim 6250	D	6.75	22.0	Tim 1250	S.P.	Ros	Day	Fir	3400
D-Oit A-1...	2490	Opt	33x5°	33x5°	33x5°	Own	4x5½	22.5	L	PC	Non	Mod	Zen	Rem	U	3	Spi	Tim 5512	B	4.23	15.6	Tim 1250	Row	Ros	Mun	Fir	3000
Dorris K-2...	132		33x5°	33x5°	33x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Mod	Zen	Rem	U	3	Pet	Tim	B-L	5.50	22.0	Tim	Fen	Woh	Day	Fir	3000
Duplex D...	132		33x5°	33x5°	33x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Mod	Zen	Rem	U	3	Pet	Tim	B-L	5.50	22.0	Tim	Fen	Woh	Day	Fir	3000
Federal R-2...	132		33x5°	33x5°	33x5°	Con J-4	3½x5	22.5	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 6250	P	5.60	18.7	Tim 1250	Gen	Woh	Dis	Own	2950
Ford T...	370	124	30x3½°	32x4½°	32x4½°	Own T-4	3½x4	22.5	L	PC	Non	Own	Zen	Rem	U	3	Own	Tim T	W	6.10	19.9	Own T	Own	Woh	Hoo	Own	1520
Fulton A...	1495	130	33x5°	33x5°	33x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Own	Zen	Rem	U	3	Spi	She W1002	B	6.10	19.9	Col 5038	Row	Lav	Hoo	Own	2800
Garford 15...	132		34x5°	34x5°	34x5°	Bud MU	3½x5½	21.0	L	PC	Non	Lon	Zen	Rem	U	3	Spi	Sta	W	6.50	24.7	Own 15	Per	Gen	Pru	Own	3500
Gary W...	1875	130	36x3½°	36x3½°	36x3½°	Bud WTU	3½x5½	22.5	L	PC	Non	Lon	Zen	Rem	U	3	Spi	Tim 6352	W	8.25	24.7	Tim 1452	Det	Ros	Pru	Cdy	3435
GMC K-16...	132		34x5°	34x5°	34x5°	Own K-16	3½x5½	19.6	L	PC	Non	Own	Mar	Rem	U	3	U-M	Tim K-16	B	5.60	21.9	Own K-16	Amc	Gen	Day	Own	3435
Goffredson 20...	6095	131	34x5°	34x5°	34x5°	Bud WTU	3½x5½	22.5	L	PC	Non	McC	Zen	Rem	U	3	Spi	Tim 6250	W	6.60	21.9	Tim 1250	Amc	Gen	Day	Own	2935
Graham Bros. DA...	1265	140	33x4½°	33x4½°	33x4½°	Dod 4	3½x5	24.0	L	PS	Non	McC	Ste	Rem	U	3	U-P	Own 13360	S	6.28	29.2	Dod 4	Det	Dod	Kel	Own	2370
Graham-Pioneer 10-5p...	129		33x5°	33x5°	33x5°	Lye CT	3½x5	22.5	L	PC	Non	Own	Zen	Rem	U	3	Own	Tim 2311B	D	5.75	23.0	Tim 1100	Per	Ros	S.M	Fir	2600
Grass-Premier 40...	1475	122	32x4½°	32x4½°	32x4½°	Own O	3½x5	22.5	L	PC	Non	Chi	Zen	Rem	U	3	Spi	Tim 513	B	6.13	18.7	Tim 1100	Det	Woh	Day	Kel	1510
Gray O...	575	120	30x3½°	32x4½°	32x4½°	Bud WTU	3½x5½	21.0	L	PC	Non	Own	Chi	Zen	Rem	U	3	Tim 1D	Def	6.23	18.7	Tim 1100	Det	Woh	Day	Kel	3250
Hawkeye...	1550	136	34x5°	34x5°	34x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Own	Zen	Rem	U	3	Spi	Tim 513	B	6.23	18.7	Tim 1100	Det	Woh	Day	Kel	3250
Independent (Iowa) J...	1450	136	34x5°	34x5°	34x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Own	Zen	Rem	U	3	Spi	Tim 513	B	6.23	18.7	Tim 1100	Det	Woh	Day	Kel	3250
L. L. L...	1450	136	34x5°	34x5°	34x5°	Bud WTU	3½x5½	22.5	L	PC	Non	Own	Zen	Rem	U	3	Spi	Tim 513	B	6.23	18.7	Tim 1100	Det	Woh	Day	Kel	3250
Interm'tl 'S...	124		32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen	Rem	U	3	Pet	Tim 5511	I	6.11	24.9	Tim 1250	G-C	Lay	S.M	Fir	3200
			32x4½°	32x4½°	32x4½°	Lye-Spec	3½x5	19.6	L	PC	Non	Own	Zen														

[illegible]

For full name and address of manufacturer and information regarding complete line see page 43

Trade Name and Model	General			Engine					Electrical System		Clutch		Gearset			Rear Axle		Gear Ratios		Front Axle Make and Model		Springs (Make)		Steering Gear (Make)		Wheels (Make)		Rims (Make)		Chassis Weight (lbs.)	
	Chassis Price	Tire Size & Wheelbase		Bore and Stroke (Inches)	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Generator and Starter (Make)	Type	Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	From Axle Make and Model	Type	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)			
		Front (Inches)	Rear (Inches)							Carburetor (Make)	Fuel Feed																				
1 1/2 Ton—Con'd																															
Federal S-23	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.25	36.2	Own S-23	Per	Ros	Std	Std	3900	
Front Drive FT.	2800	120	32x6	32x6	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.00	34.8	Own FT.	Per	Ros	Std	Std	3350
Garford 30.	2525	143	32x6	32x6	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.50	34.8	Own FT.	Per	Ros	Std	Std	4450
Garfordson 40.	2525	143	32x6	32x6	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.50	34.8	Own FT.	Per	Ros	Std	Std	4000
Graham Bros. E.A.	1325	140	33x4 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.28	34.8	Own FT.	Per	Ros	Std	Std	3600
Graham-Pioneer 15.	1325	140	33x4 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.28	34.8	Own FT.	Per	Ros	Std	Std	3800
Graham-Pioneer 65.	1880	138	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	3200
Grass-Premier 65.	1880	138	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	3200
Gullder D.	2450	142	34x3 1/2	34x5 1/2	4 x 5 1/2	22.6	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	5.50	34.8	Own FT.	Per	Ros	Std	Std	3200
G. W. W. Super.	1650	142	35x5 1/2	35x5 1/2	4 x 5 1/2	22.6	H	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	6.00	18.0	Own FT.	Per	Ros	Std	Std	3200
Hawkeye K.	1900	149	34x5	38x7	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.50	34.8	Own FT.	Per	Ros	Std	Std	3750
Hug TA.	2150	142	34x5	38x7	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.50	34.8	Own FT.	Per	Ros	Std	Std	3900
Independent GW.	2150	142	34x5	38x7	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.50	34.8	Own FT.	Per	Ros	Std	Std	3900
Indiana 15.	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	3875	
International 33.	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	4100	
Jumbo 15-8.	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	4070	
Jumbo 15.	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	4170	
Kearns N.	1650	136	34x4	34x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.60	34.8	Own FT.	Per	Ros	Std	Std	4550
Kelly-Springfield K33	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.60	34.8	Own FT.	Per	Ros	Std	Std	4550	
Kenworth.	142	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.60	34.8	Own FT.	Per	Ros	Std	Std	4620	
King Zeiter.	2275	152	34x4	34x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	4300
Kissel.	1975	152	34x4	34x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.80	34.8	Own FT.	Per	Ros	Std	Std	4300
Kleiber.	2600	147	36x4 1/2	36x7 1/2	4 1/2 x 5 1/2	27.2	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.75	41.5	Own FT.	Per	Ros	Std	Std	4300
Larrabee XJ.	2465	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.66	31.4	Own FT.	Per	Ros	Std	Std	4200
Luedinghaus.	144	36x3 1/2	36x5 1/2	3 3/4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.66	31.4	Own FT.	Per	Ros	Std	Std	4200	
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	4900
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	4900
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5100
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis	Rem	D	Tim 6460	A	4	Pet	Tim 6460	D	W	1 1/2	7.99	46.8	Own FT.	Per	Ros	Std	Std	5300
Mackac LI.	3000	150	36x4	36x4	4 x 5 1/2	22.5	L	PC	Non	Own	Zen	V	Eis																		

2 Ton

2 Ton	2500	36x4	36x5	4x3 1/2	25.6 L	PC	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Aaron K-2	2890	36x4	36x5	4x3 1/2	25.6 L	FP	Dup	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Amco 40	141	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	FP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Amco 40-L	147	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	FP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar F	2200	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar H	2300	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar K	2400	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar L	2500	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar M	2600	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar N	2700	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar O	2800	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar P	2900	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar Q	3000	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar R	3100	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar S	3200	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar T	3300	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar U	3400	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar V	3500	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar W	3600	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar X	3700	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar Y	3800	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar Z	3900	34x3 1/2	34x5 1/2	4x3 1/2	22.5 L	SP	Non	G&O	Zen	V	Bos	Del	Ful	D	Ful	AAU	U	3	Tim	W	1/2	Ros	Sm	Non
Autocar AA	400																							

For full name and address of manufacturer and information regarding complete line see page 43

Trade Name and Model	General			Engine						Electrical System		Clutch		Gearset		Rear Axle		Gear Ratios		From Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)			
	Standard Wheelbase (inches)	Tire Size (inches)		Bore and Stroke (inches)	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Carburetor (Make)	Fuel System	Ignition System (Make)	Generator and Starter (Make)	Type	Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model							Type	Total Reduction in High	Total Reduction in Low
		Front (inches)	Rear (inches)																									
2½ Ton																												
Acme 60.....	152	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	Dup	G&O	Zen	V	RRBo	Del	P	Cot RU	U 8	4	Blo	Tim 6560	W	9.25	48.1	A	Tim 154 OB	Det	Ros	Bim	4830
Acorn 50.....	156	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	Dup	G&O	Zen	G	RRBo	Del	D	B-L 51	D	4	Spi	Tim 6560	W	7.57	40.8	B	Tim 154	Mer	Ros	5500	
Amer.-La France 2R.....	3150 Opt	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	D	B-L 50	D	4	Spi	Tim 6560	W	9.25	49.5	A	Tim 154B	Nat	Ros	Day	5500
Armstrong HWC.....	3150 Opt	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	D	B-L 50	D	4	Spi	Tim 6560	W	9.25	49.5	A	Tim 154B	Nat	Ros	Day	5500
Armstrong 22C.....	3375 156	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	V	RRBo	Del	D	B-L 51	D	4	Spi	Tim 6560	W	9.25	49.5	A	Tim 154B	Sat	Ros	Day	5500
Atterbury 22C.....	3475 180	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	V	RRBo	Del	D	B-L 51	D	4	Spi	Tim 6560	W	9.25	49.5	A	Tim 154B	Sat	Ros	Day	5500
Autocar H.....	3450 114	34x5	36x8	4 1/2 x 5 1/2	25.6	L	SP	Pha	Chi	Str	G	RRBo	Del	P	B-L 35	P	4	Aspi	Tim 6560	W	7.72	46.3	A	Tim 154	Del	Ros	Hoo	5500
Autocar K.....	3550 138	34x5	36x8	4 1/2 x 5 1/2	25.6	L	SP	Pha	Chi	Str	G	RRBo	Del	P	B-L 35	P	4	Aspi	Tim 6560	W	7.72	46.3	A	Tim 154	Del	Ros	Hoo	5500
Available JH-2½.....	3160 152	36x4	36x7	4 1/2 x 5 1/2	25.6	L	PP	PC	Chi	Zen	V	RRBo	Del	P	B-L 35	P	4	M-E	Tim 6560	W	8.50	40.3	A	Tim 154	Tut	Ros	Sen	5200
Besemer J2.....	158	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 50	D	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Beta D-3.....	2985 160	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Bridgport B.....	2990 155	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Brinton D.....	2975 150	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Brockway K.....	153	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Chicago 25.....	158	36x4	36x7	4 1/2 x 5 1/2	25.6	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Columbia G.....	2450 148	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Clydesdale 8.....	156	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Commerce 25B.....	150	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Concord J.....	3000 152	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Corbett B.....	144	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Day-Elder DN.....	160	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Diamond-T U2.....	3250 154	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Dixon C.....	2850 168	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
D-Ole C.....	160	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Duplex AC.....	173	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Duplex AB.....	157	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Federal U2.....	156	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Garford 50.....	3250 148	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Gary J. K-41A.....	156	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
G.M.C. K-41B.....	156	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
G.M.C. K-41C.....	191	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Gramm-Pioneer 50.....	3175 152	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Gramm-Pioneer 125.....	3000 Opt	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Grass-Premier 80.....	2950 160	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Harvey WFB.....	3000 150	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Independent HW.....	2940 159	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Indiana 26.....	159	36x4	36x7	4 1/2 x 5 1/2	27.2	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Jumbo 25.....	152	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Kankakee H.....	3350 146 1/2	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Kelly Spr'g'd K-380.....	150	36x4	36x7	4 1/2 x 5 1/2	24.1	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Kelly Spr'g'd K-39.....	150	36x4	36x7	4 1/2 x 5 1/2	24.1	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Kenworth K-S.....	160	36x4	36x7	4 1/2 x 5 1/2	28.9	L	PP	PC	Chi	Zen	G	RRBo	Del	P	B-L 35	P	4	Blo	Tim 6560	W	8.50	40.3	A	Tim 154	Mer	Ros	Sen	5200
Kimball																												



4 Ton

Trade Name and Model	General			Engine						Electrical System		Clutch		Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model		Springs (Make)		Steering Gear (Make)		Wheels (Make)		Rims (Make)		Chassis Weight (lbs.)				
	Standard Wheelbase (Inches)	Tire Size &&		Make and Model	Bore and Stroke (Inches)	N.A.C.C. Rated H.P.	Valve Arrangement	Governor (Make)	Radiators (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)	Make	Type	Make and Model	Location	No. of Forward Speeds	Universals (Make)		Make and Model	Type	Final Drive		Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)
		Front (Inches)	Rear (Inches)							Carburetor (Make)	Fuel Feed																							
5 Ton-con'd																																		
Pierce-Arrow WD...	4700	36x6	36x7	4 1/2 x 6	32.4	L	FP	Non	Own	Str	P	Del	Del	Own	D	Own WD	A	4	M-E	Own EHD	C	D	W	W	S.P	Own	Own WD	B	B	Own WD	S.P	Own	Bet	8420
Rover Arrow W.D.	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow L	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W	W	She	She	She 5A30	B	B	She 5A30	She	Own	Smi	10050
Sandow W50	4850	36x6	40x7	4 3/4 x 6	36.1	L	FP	Non	Own	Zen	G	Opt	Opt	B-L	D	B-L 60	A	4	M-E	Own ELD	C	D	W											

Manufacturers and Models Included in Specifications on Preceding Pages

Also Manufacturers of Buses as Listed in the Bus Table

Truck Manufacturers Who Distribute Nationally

Note: This grouping of the manufacturers has been made from the best information at hand. Manufacturers are invited to furnish us with further information in relation to their distribution which will enable us to make this grouping as correct as possible.

Acme—1, 2, 3, 3½, 4½, 6½—Acme Motor Truck Co., Cadillac, Mich.
American-LaFrance—2½, 3½, 5—American-LaFrance Fire Engine Co., Inc., Elmira, N. Y.
Armleder—1½, 2½, 3½—O. Armleder Motor Truck Co., Cincinnati, Ohio.
Atterbury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
Autocar—1, 1½, 2, 2½, 3, 4, 5, 6—Autocar Co., Ardmore, Pa.
Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
Bethlehem—1, 2, 3—Bethlehem Motors Corp., Allentown, Pa.
Bridgeport—1½, 2½, 4—Bus-Bridgeport Motor Truck Corp., Stratford, Conn.
Brockway—1, 1½, 2½, 3½, 5—Brockway Motor Truck Corp., Cortland, N. Y.
C. T.—½, ¾, 1, 1½, 2, 3, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
Chevrolet—½, 1—Chevrolet Motor Truck Co. of Mich., Flint, Mich.
Clydesdale—1½, 2½, 3½, 5, 7—Clydesdale Motor Truck Co., Clyde, Ohio.
Commerce—¾, 1½, 2½—Commerce Motor Truck Co., Ypsilanti, Mich.
Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
Defiance—1½, 1½, 2, 3—Defiance Motor Truck Co., Defiance, Ohio.
Diamond T—¾, 1½, 1½, 2½, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
Dodge—¾—Dodge Bros., Detroit, Mich.
Duplex—1, 1½, 2, 3½—Duplex Truck Co., Lansing, Mich.
Double Drive—3—Double Drive Truck Co., Benton Harbor, Mich.
F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
Federal—¾, 1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Fifth Avenue—Fifth Avenue Coach Co., New York City.
Ford—1—Ford Motor Co., Highland Park, Mich.
Front Drive—1½—Double Drive Truck Co., Benton Harbor, Mich.
G. M. C.—1, 2½, 3½, 5—General Motors Truck Co., Pontiac, Mich.
Garford—1, 1½, 2½, 4, 5, 7½—Garford Motor Truck Co., Lima, Ohio.
Gary—1, 2, 2½, 3½, 5—Gary Motor Corp., Gary, Ind.
Graham—1, 1½—Graham Brothers, Detroit, Mich.
Gramm-Bernstein—1, 1½, 1½, 2, 2½, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Gray—¾, 1—Gray Motor Corp., Detroit, Mich.
Indiana—1, 1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
International—1, 1½, 2, 3, 4½, 5—International Harvester Co. of America, Chicago, Ill.
Kelland—½, ¾, 1—Kelland Motor Car Co., Newark, N. J.
Kelly-Springfield—1½, 2½, 3½, 6—Kelly-Springfield Motor Truck Co., Springfield, Ohio.
Kissel—1, 1½, 2½, 4—Kissel Motor Car Co., Hartford, Wis.
Krebs—1½, 2½, 3½, 4, 5—Krebs Motor Truck Co., Bellevue, Ohio.
Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
Larrabee-Deyo—1½, 1½, 2½, 3½—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Maccar—1½, 1½, 2, 3, 4, 5—Maccar Truck Co., Scranton, Pa.
Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—Mack Motors, Inc., New York, N. Y.
Mason Road King—1½—Mason Motor Truck Co., Flint, Mich.
Master—1½, 1½, 2½, 3½, 5, 5½—Master Motor Truck Mfg. Co., Chicago, Ill.
Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
Menominee—1, 1½, 1½, 2, 3½, 5—Menominee Motor Truck Co., Clintonville, Wis.
Nash—1, 2—Nash Motors Co., Kenosha, Wis.
Northway—2, 3½—Northway Motors Corp., Natick, Mass.
O. B.—1, 2, 3, 5—O. B. Electric Vehicles, Inc., Long Island City, N. Y.
Oshkosh—2, 2½, 4—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Overland—½—Willis-Overland Co., Toledo, Ohio.
Patriot—1, 2, 3—Patriot Mfg. Co., Havelock, Neb.
Penn—1, 2—Penn Motors Corp., Philadelphia, Pa.
Pierce-Arrow—2, 3, 4, 5, 6, 7½, T.T.—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
Reo—1½—Reo Motor Car Co., Lansing, Mich.
Republic—1½, 1½, 2, 3, 4—Republic Motor Truck Co., Inc., Alma, Mich.
Rowe—2½, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
Ruggles—¾, 1½, 1½, 2, 2½—Ruggles Motor Truck Co., Saginaw, Mich.
Sandow—1, 1½, 2, 2½, 3½, 5—Sandow Motor Truck Co., Chicago Heights, Ill.
Schacht—1½, 2, 2½, 3, 4, 5—G. A. Schacht Motor Truck Co., Cincinnati, Ohio.
Selden—1½, 2½, 3½, 5—Selden Truck Corp., Rochester, N. Y.
Service—1½, 1½, 3, 3½, 4—Service Motor Truck Co., Wabash, Ind.
Signal—1, 1½, 2½, 3½, 5—Signal Truck Corp., Detroit, Mich.
Standard—1½, 1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
Stewart—1, 1½, 1½, 2, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
Transport—1, 1½, 2, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
United—1, 1½, 2, 2½, 3, 3½—United Motor Products Co., Grand Rapids, Mich.
Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
Ward—750 lb. to 7 Ton—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
Yellow Cab—¾, 1½—Yellow Cab Mfg. Co., Chicago, Ill.

Truck Manufacturers Who Distribute Locally

Acorn—2½—Acorn Motor Truck Co., Chicago, Ill.
Acason—2, 3, 4, 5—The Acason Corp., Detroit, Mich.
Ace—1½, 3—American Motor Truck Co., Newark, Ohio (receiver).
Available—1½, 2, 2½, 3½, 5—Available Truck Co., Chicago, Ill.
Betz—1, 2½—Betz Motor Truck Co., Hammond, Ind.
Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
Buffalo—2, 3—Buffalo Truck and Tractor Corp., Clarence, N. Y.
Casco—1—Casco Motors, Inc., Sanford, Me.
Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
Clinton—1½, 2, 3, 4, 5 to 7—Clinton Motors Corp., Reading, Pa.
Columbia—1½, 2½, 3—Columbia Motor Truck Co., Pontiac, Mich.
Concord—1, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
Corbitt—¾, 1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
De Martini—1½, 2, 3, 4—De Martini Motor Truck Co., San Francisco, Cal.
Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
Dixon—1½, 2, 2½, 3½—Dixon Motor Truck Co., Altoona, Pa.
D-Olt—1, 1½, 2, 2½, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
Dorris—1, 2, 3½—Dorris Motor Car Co., St. Louis, Mo.
Eagle—1½, 2—Eagle Motor Truck Corp., St. Louis, Mo.
Fulton—1, 2—Fulton Motors Corp., Farmingdale, N. Y.
G. W. W.—1½, 2—Wilson Truck Mfg. Co., Henderson, Iowa.
Gottfredson—1, 1½, 2½, 4, 5—Gottfredson Truck Corp., Ltd., Walkerville, Ont.
Grass Premier—1, 1½, 2, 2½, 3½—Grass Premier Truck Co., Sauk City, Wis.
Guilder—1½, 2, 3—Guilder Engineering Co., Poughkeepsie, N. Y.
Harvey—2, 2½, 3½, 6, 10—Harvey Motor Truck Co., Harvey, Ill.
Hawkeye—1, 1½, 2, 3½—Hawkeye Truck Co., Sioux City, Iowa.
Hug—1½, 2—The Hug Co., Highland, Ill.
Hurlburt—1½, 2½, 3½, 5, 7—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
Jumbo—1½, 2, 2½, 3, 3½, 5—Nelson Brothers Co., Saginaw, Mich.
Kalamazoo—Kalamazoo Motor Corp., Kalamazoo, Mich.
Kankakee—2½—Kankakee Motor Truck Co., Kankakee, Ill.
Kearns—1, 1½, 2, 3½, 5—Kearns-Dughe Motors Co., Danville, Pa.
Kenworth—1½, 2½, 3½—Kenworth Motor Truck Corp., Seattle, Wash.
Kimball—2, 2½, 4, 5—Kimball Motors Corp., Los Angeles, Cal.
King Zeitler—1, 1½, 2½, 3½, 5—King Zeitler Co., Chicago, Ill.
Kleiber—1½, 2½, 3½, 5—Kleiber Motor Truck Co., San Francisco, Cal.
Lange—2½, 3½—Lange Motor Truck Co., Pittsburgh, Pa.
Luedinghaus—1, 1½, 2½, 3½, 5—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
Moreland—1, 1½, 2, 3, 5—Moreland Motor Truck Co., Burbank, Cal.
National—1½, 2, 3, 4, 5—National Steel Car Corp., Ltd., Hamilton, Ont., Canada.
Nelson-LeMoon—1, 1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
Netco—2, 2½, 3, 4—New England Truck Co., Fitchburg, Mass.
Noble—1, 1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.
Ogden—1, 1½, 2½, 3½, 5—Ogden Truck Co., Chicago, Ill.
O. K.—1, 1½, 2, 2½, 3½—Nolan Truck Co., Okay, Okla.
Old Reliable—2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
Oneida—2, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.
Parker—1, 1½, 2, 3, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Perfection—¾, 1½, 2, 3, 4½, 5—Perfection Truck Co., Minneapolis, Minn.
Philadelphia Motor Coach—Phila. Motor Coach Co., Phila., Pa.
Pioneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburgher—2, 3, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—1½, 2½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
Rainier—¾, 1, 1½, 2, 2½, 3½, 5—Rainier Motor Corp., Long Island City, N. Y.
Red Ball—3—Red Ball Transit Co., Indianapolis, Ind.
Rumely—1½—Advance Rumely Thresher Co., Laporte, Ind.
Sanford—1, 1½, 2, 2½, 3½, 5—Sanford Motor Co., Syracuse, N. Y.
Saurer—6½, T.T.—Adolph Saurer, Inc., New York, N. Y.
Steinmetz—Steinmetz Electric Motor Car Corp., Arlington, Baltimore, Md.
Stoughton—1½, 1½, 2, 3—Stoughton Wagon Co., Stoughton, Wis.
Super Truck—2½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
Triangle—1, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
Twin City—2, 2½—Minneapolis Steel & Machinery Co., Minneapolis, Minn.
Union—2½, 4—Union Motor Truck Co., Bay City, Mich.
U. S.—1½, 1½, 2½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
Wachusett—1, 1½, 2, 2½—Wachusett Motors, Inc., Fitchburg, Mass.
Walker Johnson—1½, 3—Walker Johnson Truck Co., Woburn, Mass.
Walter—T.T.—Walter Truck Co., Long Island City, N. Y.
Ward La France—2½, 3½, 5—Walker Motors, Inc., New York, N. Y.
Wichita—1, 2, 3, 4—Wichita Falls Motor Co., Wichita Falls, Texas.
Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
Witt-Will—1½, 2, 2½, 3, 4—Witt-Will Co., Inc., Washington, D. C.

DETAILED MOTOR

This Table Comprises Motor Bus Chassis Which Are Designed For Other Chassis Which Are Recommended and Adaptable for Bus Use See Models

Line Number	MAKE AND MODEL	GENERAL							ENGINE							ELECTRICAL SYSTEM							NORMAL SPEED	
		Seating Capacity	Chassis Price	Weights			Tread		Make and Model	Number of Cylinders Bore and Stroke	Rated Horse Power N.A.C.C.	Valve Arrangement	Oiling System	Radiator Make	Fuel System		Ignition System Make	Generator and Starter Make	Battery		Voltage and Amp. Hr. Cap.	High W. P. H.	Low M. P. H.	
				Chassis Only	Chassis with Body	Recommended Body Allowance	Wheelbase	Front							Rear	Carburetor Make			Fuel Feed	Make				Model
1	Acme K.	30	6900	9900	3000	200	58 1/2	74	Cont 6B	6-3 1/2 x 5	33.7	L	PC	Own	Zen	V	Eis	Del	Wil	SJRT4	6-111	30	5.7	
2	Bridgeport 45.	30	3850	5500	1500	178	60	72	Buda EBU	4-4 1/2 x 5 1/2	28.9	L	PC	Own	Zen	V	Eis	Bos	Wil		6-120			
3	Brookway EB.	25	3200	4600	1500	156	56	56	Wisc SU	4-4 x 5	25.6	I	PC	G&O	Zen	V	Eis	L-N	Exi		6-105			
4	Brookway J3.	25	6400	9280	2880	185	66 1/2	71	Cont 6B	6-3 3/4 x 5	33.7	L	PC	Own	Zen	V	Eis	L-N	Exi		12-220	25	5.0	
5	Clinton 65B.	30	4075	5925	8700	2725	58 1/2	58 1/2	Bud EBU	4-4 1/2 x 5 1/2	28.9	L	PC	Own	Zen	V	Bos	Bos	Pol	611SHK	6-90	30	3.0	
6	Day-Elder 20.	20	5200	2500	168	56	58	58	Cont K4	4-4 1/2 x 5 1/2	27.2	L	FP	Bus	Zen	V	Eis	Bos	Wil	SJRT6	6-153	35	10.0	
7	Day-Elder 25.	25	5600	3000	180	58	58 1/2	74	Buda EBU	4-4 1/2 x 5 1/2	28.9	L	PC	Bus	Zen	V	Eis	Bos	Wil	SJRT6	6-153	35	7.0	
8	Day-Elder 30.	30	6000	3500	192	68 1/2	74	74	Cont 6T	4-3 3/4 x 5 1/2	31.5	L	PC	Bus	Zen	V	Eis	Bos	Wil	SJRT6	6-153	35	7.0	
9	Duplex AB.	23	4400	160	160	56	62	71	Hink HAA	4-4 x 5 1/2	25.6	L	PC	Str	V	Wes	Wes	Pol		6-34				
10	Fageol.	22	5375	8700	218	70	71	71	Has 50	4-4 1/2 x 5 1/2	28.9	I	PC	Lon	Zen	V	Del	Del	Exi		12-	35	6.0	
11	Fageol.	29	5825	9600	218	70	76 1/2	76 1/2	Has 75	6-4 1/2 x 5 1/2	43.0	I	PC	Lon	Zen	V	Del	Del	Exi		12-	30	7.0	
12	Federal.	18	4200	1800	160	56	59 1/2	60	Cont 6M	4-3 3/4 x 4 1/2	27.3	L	PC	Lon	Zen	V	Eis	Rem	Exi	3LXRE	6-185	35	7.0	
13	Federal.	25	5450	2500	190	60	60	60	Cont 6B	4-3 3/4 x 5	33.7	L	PC	Mod	Zen	V	Eis	Rem	Exi	3LXRE	6-185	35	6.0	
14	Fifth Ave. J.	29	6900	5660	8235	2575	68 1/2	71 1/2	Yell EZ	4-4 x 6	25.6	X	PC	Own	Zen	V	Eis	N-E	Wil	STRN27	12-90	30	7.5	
15	Fifth Ave. L.	51	8860	6670	174 1/4	67	77 1/2	77 1/2	Yell EZ	4-4 x 6	25.6	X	PC	Own	Zen	G	Eis	N-E	Wil	STRN27	12-90			
16	Garford 51D.	29	4350	6500	9900	3400	68	75 3/4	Buda YBU	4-4 1/2 x 6	32.4	L	PC	Own	Str	V	Spl	Rem	Wil	STRN6	6-190	35	5.0	
17	Garford 726.	25	3750	4800	7800	3000	56	65 1/2	Buda EBU	4-4 1/2 x 5 1/2	28.9	L	PC	Own	Str	V	Spl	Rem	Wil	STRN6	6-190	35	5.4	
18	Guilford 30.	30	4500	5600	8800	3600	64	70	Bud EBU	4-4 1/2 x 5 1/2	28.9	L	FP	G&O	Zen	V	Eis	L-N	Wil	SJRT28	12-104	30	5.0	
19	International 33.	18	5200	7780	2400	202	64 1/2	66	Own 33	4-4 1/2 x 5	22.5	I	Sp	Own	G	Bos	Rem	Pol		6-100	19			
20	International 53.	29	5200	7780	2400	202	64 1/2	66	Own 33	4-4 1/2 x 5	22.5	I	Sp	Own	V	Bos	Rem	Pol		6-200	34			
21	Kissel.	18	1910	3450	4850	1400	56	56	Own 4-36	4-4 1/2 x 5 1/2	28.9	L	Sp	Spa	Str	V	Bos	Rem	Wil	SJRT6	6-153	40		
22	Larrabee X-2.	16	1910	3450	4850	1400	56	56	Cont 8R	6-3 3/4 x 4 1/2	27.3	L	PC	Fed	Zen	V	Bos	Bos	Exi	3XE15	6-80	40	8.0	
23	Larrabee XH3.	21	3600	4670	7670	3000	62	66	Cont 6B	6-3 3/4 x 5	33.7	L	PC	Fed	Zen	V	Bos	Bos	Exi	36XRE25	6-240	35	7.0	
24	Mack AB.	25	4435	6075	9075	3000	58 1/2	60 1/2	Own AB	4-4 1/2 x 5	28.9	L	PC	Own	Zen	V	Spl	L-N	Exi	6LXRE13	12-120	33	8.0	
25	Master.	30	6000	9500	3500	194	59	59	Buda EBU	4-4 1/2 x 5 1/2	28.9	L	PC	Chi	Zen	V	Eis	Wes	Wil		12-	25	5.0	
26	Menominee T.	16	2600	3850	3850	175	56	56	Wisc Y	6-3 3/4 x 5	25.6	L	PC	Own	Zen	V	Bos	Bos	Wil		6-	38		
27	Menominee DB.	25	4400	5900	9100	3200	68	73	Wisc TAU	4-4 x 6	25.6	L	PC	Own	Zen	V	Eis	Bos	Wil	SJR4	6-125	32	6.0	
28	Moreland RC.	16	2280	3850	5850	2000	56	57 1/4	Here O	4-4 x 5	25.6	L	PC	Own	Zen	V	Spl	A-L	Hob	6HTXR15A	6-140	25		
29	Moreland EC.	20	3780	4590	7590	3000	61	58	Cont K4	4-4 1/2 x 5 1/2	27.3	L	FP	Own	Str	V	Spl	Spl	Hob	6HTXR15A	6-140	25		
30	Moreland AC.	25	4700	5660	9160	3500	68	69	Cont L4	4-4 1/2 x 5 1/2	32.5	L	FP	Own	Str	V	Spl	Spl	Hob	6HTXR15A	6-140	25		
31	Parker B23B.	16	1400	2700	4600	1900	58	58	Buda WTU	4-3 3/4 x 5 1/2	22.5	L	PC	Own	Zen	V	Wes	Wes	Glo	611	6-80	35	9.0	
32	Parker E24B.	18	2500	3600	5800	2300	58	58	Wisc SU	4-4 x 5	25.6	I	PC	Own	Str	V	Wes	Wes	Glo	611	6-80	40	10.0	
33	Phila. Motor Coach P.	65	6500	8750	14650	5900	72	75	Own P	6-4 x 6	38.4	I	FP	G&O	Zen	V	N-E	N-E	Exi	6MVE13	12-180	25	3.0	
34	Pierce-Arrow Z.	30	4750	6400	220	68	75 3/4	75 3/4	Own	4 x 5 1/2	38.0	T	FP	Own	P	Del	Wes	Wil						
35	Reo W.	21	1750	1750	1750	1750	56	57	Own W	6-3 1/2 x 5	24.3	I	PC	Own	Str	V	Bos	Bos	USL		6-109	35		
36	Republic 51.	15	1750	1750	1750	1750	60	58	Lye	4-3 3/4 x 5	25.6	L	FP	Own	Str	V	Bos	N-E	Pol	615KPN	12-	25	6.2	
37	Selden 52.	30	7200	10200	3000	195	68	74	Cont L4	4-4 1/2 x 5 1/2	32.4	L	FP	Lon	Str	V	Bos	N-E	Pol	615KPN	12-	300	25	6.2
38	Selden.	30	7200	10200	3000	195	68	74	Cont 6B	4-3 3/4 x 5	33.8	L	PC	Lon	Zen	V	Eis	N-E	Pol	615KPN	12-	378		
39	Ultimate BU.	30	5600	198	198	66 1/2	69	69	Buda YBU	4-4 1/2 x 6	32.4	L	PC	Str	V	Eis	N-E	Wes	Opt		12-			
40	White 50A.	25	4950	5395	198	198	58 1/2	67 3/4	Own 50A	4-4 1/2 x 5 3/4	28.9	L	FP	Zen	V		L-N	Opt		12-				
41	Yellow Coach Z.	67	67	192	192	71	73 1/2	73 1/2	Yell EZ	4-4 x 6	25.6	X	PC	Zen	V									

*—Pneumatic
†—Dual Pneumatic
‡—Solid
§—Dual Solid
A-K—Atwater-Kent
A-L—Auto-Lite
Arc—Archibald
B&B—Borg & Beck
Bim—Bimel
B-L—Brown-Lipe
Bud—Budd
Buda—Buda

Blo—Blood
Bos—Bosch
Bus—Bush
Cla—Clark
Col—Columbia
Cont—Continental
D—Multiple Dry Disk
Day—Dayton
Del—Delco
E-D—External Driveshaft
Dtl—Detlaff
E-R—External Rear Wheel

Eis—Eisemann
Exi—Exide
F—Full Floating
1/2—1/2 Floating
Fed—Fedders
Flt—Flint
Full—Fuller
FP—Full Pressure to all Bearings, including wrist pins
G—Gravity
Glo—Globe

Gem—Gemmer
G&O—G & O
Hob—Hobbs
Hink—Hinkley
Has—Hall Scott
Herc—Hercules
I—In Head
Ig—Internal Gear
I-F—Internal Four Wheels
Ind—Indestructible
I-R—Internal Rear Wheels
Joh—Johnson

ELECTRIC COM

Name and Model Number	Total Weight Resting on Four Tires	Chassis Weight Exclusive of Battery	Minimum Load Capacity	Maximum Load Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels	
Autocar E 1F.					2400				G-E	G-E	...	R	Own	Row	34x4	34x5	Ross	107	60	
Autocar E 2D.					2800				G-E	G-E	...	R	Own	Row	34x5	34x6	Ross	120	60	
Autocar E 3H.					3200				G-E	G-E	...	R	Own	Row	34x5	36x8	Ross	128	60	
Autocar E 4Y.					4000				G-E	G-E	...	R	Own	Row	34x6	36x6½	Ross	138	60	
Autocar E 5M.					4300				G-E	G-E	...	R	Own	Row	36x7	36x7½	Ross	138	60	
C-T D-1.	5400	2200				14	A	55	G-E	Own	4	Own	Flot	Shel	36x3	36x3½	W	100	69	
C-T B-1.5.	6100	2300				14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	91½	65	
C-T D-1.5.	6200	2300				14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	116	71	
C-T B-2.	7300	2400				14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	101	66	
C-T D-2.	7300	2400				14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	124	70	
C-T B-4.	11750	4000				12	A	50	G-E	Own	4	Own	Flot	Shel	36x4	36x4½	W	116	68	
C-T C-6.	14400	4300				10	A	45	G-E	Own	4	I	D	Shel	36x4	36x4½	W	122	70	
C-T C-7.	16900	5000				10	A	45	G-E	Own	4	I	D	Shel	36x5	36x5½	W	126	65	
C-T A-7.	17700	5800				11	A	45	G-E	Own	4	I	D	Shel	36x6	36x4½	W	122	60	
C-T A-10.	22250	6500				10	A	45	G-E	Own	4	I	D	Shel	36x7	36x5½	W	132	59	
Kelland AT.		1950	1000	1500		15	S	50	G-E	G-E	4	R	R	Flot	Mer	34x3	34x3	Ross	102	60
Kelland BT.		2050	1500	2000		15	S	50	G-E	G-E	4	R	R	Flot	Mer	34x3½	34x3½	Ross	102	60
Kelland CT.		2150	2000	2500		15	S	50	G-E	G-E	4	R	R	Flot	Mer	34x3½	34x4	Ross	102	60
Kelland AH.		2500	1000	1500		15	A	45	G-E	G-E	4	C	D	Mer	36x3	36x3	Hin	106	60	
Kelland BH.		2600	1500	2000		15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x3½	Hin	106	60	
Kelland CH.		2700	2000	2500		15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x4	Hin	106	60	
Kelland ATS.		2200	1000	1500		15	H&S	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3	Ross	102	60	
Kelland BTS.		2300	1500	2000		15	H&S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60	
Kelland CTS.		2400	2000	2500		15	H&S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	114	60	
Lansden Century		1700		1250	1600	15	S	50	G-E	Own	4	R	Flot	SP	32x4½	32x4½	Lav	108	50	
Lansden Century		1950		2000	1850	15	S	50	G-E	Own	4	R	Flot	SP	33x5	33x5	Lav	112	50	
Lansden Marathon		2900		2000	1850	12	A	50	G-E	Own	4	C	D	SP	36x3½	36x4	.....	108	60
Lansden Marathon		4400		4000	2250	11	A	50	G-E	Own	4	C	D	SP	36x4	36x3½†	.....	120	60

BUS SPECIFICATIONS

and Sold Exclusively for Passenger Transportation

Having Sign (\$) in the "COMMERCIAL CAR SPECIFICATIONS"

Line Number	TRANSMISSION				REAR AXLE					Front Axle Make and Model	MISCELLANEOUS				DIMENSIONS (In.)							
	Clutch	Gearset		Universal	Make and Model	Final Drive	Gear Ratio				Steering Gear Make	Tires (in.)		Wheels—Make	Rims—Make	Floor Height	Turning Radius	Overall		Clearance from Ground		
		Type and Make	Make and Model				Location	Number of Forward Speeds	Make	Type		Total in High	Total in Low					Service Brake Type & Location	Front		Rear	Length	Width
1	P. B. & B.	Cot RU	U	4	Blo	Tim 5511	Wo	F	6.8	30.3	I-R	Tim 1540B	Ros	36x6*	36x6†	Bud	Fir	27	38	312	90	5
2	D. B. L.	B. L. 50	U	4	Spi	Tim 5560	Wo	F	6.7	...	I-R	She Spec	Ros	36x6*	36x6†	Bud	Fir	31½	...	...	...	...
3	D. B. L.	B. L. 35	U	4	Spi	Col 52028	SP	F	5.1	...	E-R	Col 5084	Gem	36x5*	32x6*	Ind	Fir	28½	...	...	...	...
4	D. B. L.	B. L. 55	U	4	Spi	Clas 3D	Ig	F	7.0	...	E-D	Shu 610B	Gem	36x6*	36x6†	Sew	Fir	27½	31½	295½	84	10
5	D. B. L.	B. L. 55	U	4	M-E	Tim 5560	In	F	6.5	34.8	I-R	Tim 1544B	Ros	36x6*	36x6†	Bud	Fir	30	37	270	75½	9½
6	D. B. L.	B. L. 35	U	3	Spi	Tim 6460	Wo	F	6.0	20.2	I-R	Col 7018	Gem	36x6*	38x7*	Van	Fir	32	30	237	70½	11
7	D. B. L.	B. L. 51	U	4	Spi	Tim 5560	Wo	F	6.8	36.4	I-R	Col 8513	Gem	36x6*	40x8*	Van	Fir	32	30	260	75½	11
8	D. B. L.	B. L. 51	U	4	Spi	Tim 5511S	Wo	F	6.8	36.4	I-R	Shu 610	Gem	36x6*	36x6†	Van	Fir	25	27	271½	90	6½
9	D. B. L.	B. L.	U	4	Pet	She W103	Wo	F	6.5	...	I-R	Ros	35x5*	38x7*	Mot	...	31½	...	...	...	...
10	D. B. L.	B. L. 50	U	4	Spi	Tim 5511	Wo	F	4.6	19.7	I-F	Tim 1524	Ros	36x6*	38x7*	Bud	...	19½	38	306	84	7½
11	D. B. L.	B. L. 50	U	4	Spi	Tim 5511	Wo	F	4.6	19.7	I-R	Tim 4550	Ros	38x7*	36x6†	Bud	...	19½	38	312	89	7½
12	P. B. & B.	Own	U	4	Spi	Tim 6460	Wo	F	6.5	32.5	-R	Own	Gem	35x5*	34x7*	Smi	Fir	28	28	245	...	10
13	P. B. & B.	Det R400	U	4	Spi	Tim 5560	Wo	F	6.7	39.8	...	Own	Gem	36x6*	36x8*	Smi	Fir	30	28	266½	...	10
14	P. Own	Own J	U	4	Sne	Tim 6412	Wo	F	5.4	21.6	I-R	Tim 1523	Ros	34x5	34x7	Own	...	29½	31	277	87½	7
15	P. Own	Own L	U	4	Sne	Own L	Ig	F	6.6	...	E-D	Own L	Ros	36x5†	36x5†	Own	...	26	...	...	...	...
16	D. Own	Own 51D	U	4	Spi	Tim 6511G	Wo	F	5.4	...	I-R	Tim 1550	Ros	36x6*	36x6†	Day	Fir	28½	30	295	91	7
17	D. Own	Own 726	U	4	Spi	Tim 6560	Wo	F	5.4	21.6	I-R	Own	Ros	32x6*	32x6†	Bud	Fir	32	30	236	78½	7½
18	D. B. L.	B. L. 51	U	4	M-E	Wis 68C	R	F	5.8	...	E-D	Shu 5550B	Ros	36x6*	36x6†	Bud	...	26	70	300	83	11
19	D. Own	Own 33	U	3	Own	Own 33	Ig	F	...	...	I-R	Own	36x4	36x6	Own	...	...	...	...	...	...
20	D. Own	Own 53	U	4	Own	Own 53	Ig	F	...	...	I-F	Own	36x6*	36x6†	Bud	...	34½	...	...	...	...
21	D. B. L.	B. L. 35	U	4	Spi	Wis 60B	R	F	5.8	19.0	-R	Shu 610	Ros	34x7*	34x7*	Whi	Gdy	24	27	252	76	8
22	D. B. L.	B. L. 31	U	4	Sne	Sal D	Be	F	7.7	27.6	E-R	Sal	Gem	34x5	34x5	Ind	Fir	29	27	220	70	11
23	D. B. L.	B. L. 31	U	3	Spi	She	W	F	5.5	26.4	I-R	Shu 5550B	Ros	32x6*	32x6†	Bud	...	25	28	262	86	9
24	D. Own	Own AB	U	4	Spi	Own AB	R	F	5.8	19.3	I-R	Own AB	Own	32x6*	32x6†	Bud	...	25½	37½	300	88	6½
25	D. Ful	Ful GU7	U	4	Spi	Wal 25A	R	F	7.6	37.0	-R	Shu 610	Ros	36x6*	40x8*	StM	Fir	26	33½	...	...	...
26	D. Det	Cot AU	U	3	Spi	Col 52000	SP	F	...	...	E-F	Lav	32x6*	32x6†	Whi	...	23½	...	...	...	...
27	D. B. L.	Cot AU	U	4	Spi	Wis 120K	R	F	6.1	32.0	I-R	Tim 1550	Ros	36x6*	36x6†	Ind	Fir	26	30	256	86	10
28	D. B. L.	B. L. 30	U	4	Pet	Tim 5512	Wo	F	5.5	22.0	E-R	Tim 1250	Ros	32x6*	32x6†	Own	Gdy	23½	...	...	...	7
29	D. B. L.	B. L. 51	U	4	Pet	Tim 6410	Wo	F	6.0	32.1	I-R	Tim 1550	Ros	34x5*	34x5†	Bud	...	24½	...	...	...	8½
30	D. B. L.	B. L. 51	U	4	Pet	Tim 6511	Wo	F	6.0	32.1	I-R	Tim 1550	Ros	36x6*	36x6†	Bud	...	25½	...	...	...	9
31	D. Ful	Ful SU2	U	3	Blo	FH 72BA	Be	F	5.5	22.0	-R	FH 72BA80	Lav	32x6*	32x6†	Whi	Fir	30	21	204	66	10
32	D. Ful	Ful SU2	U	3	Blo	FH 72BA	Be	F	4.9	20.0	E-R	Con 600	Lav	32x6*	32x6†	Whi	Fir	28	25	218	66	10
33	D. B. L.	B. L. 60	U	4	Spi	Atl LC-IR	Ig	F	7.0	28.0	-R	Shu 650B	Ros	34x6†	34x6†	Ind	...	20½	25	333½	90	8
34	Own	Own W	U	4	Spi	Own W	Wo	F	6.0	32.0	-D	Own W	...	36x6	32x6†	Bud	...	28	40	303	89	8
35	Own	Own W	U	3	Spi	Own W	Be	F	5.7	...	E-D	Own W	Jac	34x7	34x7	Van	Fir	22	...	...	...	8
36	Ful	Ful	U	3	Spi	Tor	Ig	D	6.2	25.0	E-D	Own	Gem	36x5	36x5	Van	Fir	21	...	270½	67½	6½
37	D. B. L.	B. L.	U	4	Spi	Tim	Wo	F	7.7	31.0	I-R	Tim	Gem	36x5	36x5	Arc	Fir	29½	33	309	91	7
38	D. B. L.	B. L.	U	4	Spi	Tim	Wo	F	7.7	31.0	I-R	Tim	Gem	36x5	36x5	Arc	Fir	29½	33	309	91	7
39	D. B. L.	B. L.	U	4	Spi	Tim 6511A	Wo	F	6.5	...	I-R	Own 50A	Ros	36x6*	36x6†	Bud	...	28½	36	274½	81½	9½
40	Own	Own 50A	U	4	Spi	Own 50A	R	F	5.6	23.3	-R	Own 50A	Own	36x6	36x6†	Bud	Fir	28½	36	274½	81½	9½
41	P. Own	Own 2	U	4	Spi	Own Z	Wo	F	6.2	...	I-F	Own	34x5†	34x5†	...	...	...	...	...	...	...

Kel—Kells
L—L-Head
Lav—Lavine
L.N—Leece Neville
Lon—Long
M&E—Merchant & Evans
McC—McCord
Mot—Motor Wheel Corp.
N.E—North-East
NP—No Provision
Opt—Optional
P—Single Plate

Pet—Peters
PC—Pressure to all Crankshaft
& connecting Rod Bearings—
Splash to other parts
Pol—Prest-O-Lite
R—Double Reduction
Ros—Ross
Rem—Remy
R&V—R & V Knight
Sal—Salisbury
Sew—Sewell
Sne—Snead

SP—Spiral Bevel
S—Separate Unit
Spi—Spicer
She—Sheldon
Spa—Sparton
StM—St. Marys
Shu—Shuler
Str—Stromberg
Sp—Splash
Tim—Timken
U—Unit with Engine

Van—Van Motor Wheels
V—Vacuum
Wal—Walker
Whi—Whitcomb
Wes—Westinghouse
Wil—Willard
Wisc—Wisconsin
Wis—Wisconsin
Wo—Worm
X—Sleeve Valve
Yell—Yellow
Zen—Zenith

MERCIAL CARS

Name and Model Number	Total Weight Resting on Four Tires	Chassis Weight Exclusive of Battery	Minimum Load Capacity	Maximum Load Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Landen ME.	5700	7000	2950	10	A	45	G-E	Own	4	C	D	SP	36x5	36x5†	133	60			
Landen MF.	7500	10000	3350	9	A	40	G-E	Own	4	C	D	SP	36x6	36x6†	146	60			
O. B. A.	2175	14	2175	14	...	...	G-E	Own	...	C	D	...	36x3½	36x4	Own	103	...
O. B. B.	2650	13	2650	13	...	...	G-E	Own	...	C	D	...	36x4	36x3½†	Own	107	...
O. B. C.	3750	11	3750	11	...	...	G-E	Own	...	C	D	...	36x5	36x4	Own	135	...
O. B. D.	3950	10	3950	10	...	...	G-E	Own	...	C	D	...	36x6	36x5	Own	143	...
Steinmets 10.	2000	16	H&S	52	Diehl	Own	4	R	Russ	Shel	32x4½	32x4½	Lav	106	60				
Steinmets 15.	2300	16	H&S	55	Diehl	Own	4	R	Russ	Shel	33x5	33x5	Lav	114	66				
Walker 12.	1900	15	50	West	5	Own	Own	Math	34x3	36x3½	Ross	104	66						
Walker 15.	2600	15	50	West	5	Own	Own	Math	34x3	36x4	Ross	94	66						
Walker 22.	2800	14	50	West	5	Own	Own	Math	34x3½	36x4	Ross	101	66						
Walker 42.	3800	13	50	West	5	Own	Own	Math	36x4	36x6	Ross	114	66						
Walker P.	5800	11	40	West	5	Own	Own	Math	36x5	38x5†	Ross	131	66						
Walker N.	6400	10	40	West	5	Own	Own	Math	36x6	38x6†	Ross	141	66						
Walter HD.	6800	2000	2200	16	A	60	Diehl	G-E	5	B	...	32x3½	32x4	Ross	98	60			
Walter EN.	13200	5000	3100	15	A	50	G-E	G-E	5	Own	D	...	36x4	36x7	Gem	114	60		
Walter EL.	16800	7000	3700	13½	A	50	G-E	G-E	5	Own	D	...	36x5	36x4	Gem	132	60		
Walter ES.	23600	7200	11000	12	A	50	G-E	G-E	5	Own	D	...	36x6	40x6	Ross	150	70		
Walter ER.	28400	7500	15000	11	A	50	G-E	G-E	5	Own	D	...	36x7	40x7	Ross	150	70		
Ward A211.	4500	1650	550	1150	...	...	G-E	Own	4	W	Shel	Shel	32x4*	33x4½*	Own	88	56
Ward B-222.	6000	2300	1010	1700	...	...	G-E	Own	4	W	Shel	Shel	32x3½*	32x4*	Own	91	62
Ward C-211.	8000	2670	2170	2880	...	...	G-E	Own	4	W	Shel	Shel	32x3½*	34x5*	Own	96	64
Ward E-211.	12000	3570	4480	5430	...	...	G-E	Own	4	W	Shel	Shel	34x4*	36x6*	Own	108	65
Ward G-211.	16000	4500	6560	7760	...	...	G-E	Own	5	W	Shel	Shel	36x5*	36x8*	Own	120	68
Ward J-211.	22500	6330	8850	10500	...	...	G-E	Own	5	W	Shel	Shel	36x6*	36x10*	Own	136	70
Ward M-211.	31000	9600	13500	15750	...	9	G-E	Own	5	W	Shel	Shel	36x7*	36x7	Own	142	71		

NOTE: Battery Equipment on all above makes is at the option of the purchaser. Battery Location Abbreviations: A—amidships; H—under hood; and S—under seat.

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

* Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line
Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width				
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter ★	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Ace 40-1½	3	1	1	V	7	1½	8	1½	40½	2	12	3½	4	12	3½	4	4	122½	76½	215½	32	9			
Ace 60-3	3	1	1	V	10	1½	15	1½	42½	2	13½	3½	4	13½	3½	4	4	122½	84½	241	34	9½			
Acme 20L-1	3	1	1	V	7	1½	11	1½	34	1½	12	3	4	12	3	4	4	108½	63½	200	34	10½			
Acme 40-2	4	1	1	V	11	1½	11	1½	40	1½	12	3	4	12	3	4	4	123½	74½	208	34	9½			
Acme 40L-2	4	1	1	V	11½	1½	12	1½	39½	1½	12	3	4	12	3	4	4	123½	74½	214	34	9½			
Acme 60-2½	4	1	1	V	11½	1½	12	1½	39½	1½	13	3½	4	13	3½	4	4	132½	79½	223½	34	10			
Acme 60L-3	4	1	1	V	11½	1½	12	1½	41	1½	13	3½	4	13	3½	4	4	140½	79½	235½	34	10			
Acme K (Bus)	3	1	1	V	12½	1½	12	1½	34	1½	15½	3½	4	15½	3½	4	4	220½	127½	312	41½	6			
Acme 90-3½	4	1	1	V	10	1½	12	1½	41½	1½	15½	3½	4	15½	3½	4	4	150½	95½	243	36	10½			
Acme 90L-4	4	1	1	V	10	1½	10	1½	40½	1½	15½	3½	4	15½	3½	4	4	153½	96½	255	37	10½			
Acme 125-5	4	1	1	V	10	1½	10	1½	40½	1½	18	4	4	18	4	4	4	159½	99½	261	37	10			
American-LaFrance 2R	3	1	1	V	11½	1½	9	1½	40½	1½	17	3½	4	17	3½	4	4	132	81	230½	33	10			
American-LaFrance 2R	3	1	1	V	11½	1½	9	1½	40½	1½	17	3½	4	17	3½	4	4	156	98	254	33	10			
American-LaFrance 2R	3	1	1	V	11½	1½	9	1½	40½	1½	17	3½	4	17	3½	4	4	180	110	278	33	10			
American-LaFrance 3R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	144½	90	243½	35	9			
American-LaFrance 3R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	168½	104	267½	35	9			
American-LaFrance 3R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	210½	125	309½	35	9			
American-LaFrance 5R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	144½	90½	243½	36	10			
American-LaFrance 5R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	192½	114½	291½	35	9			
American-LaFrance 5R	3	1	1	V	11½	1½	9	1½	42	1½	11½	8	4	21	4	4	4	210½	125	309½	36	10			
Armleder 21-1½	4	1	1	V	12	1½	16½	1½	31½	2	11	3½	4	11	3½	4	4	Opt	Opt	Opt	32	9½			
Armleder 40B-1½	4	1	1	V	10	1½	11½	1½	33½	2	11	3½	4	11	3½	4	4	Opt	Opt	Opt	32	9½			
Armleder 40C-1½	4	1	1	V	8½	1½	11½	1½	34	1½	11	3½	4	11	3½	4	4	Opt	Opt	Opt	32	9½			
Armleder KWB-3½	4	1	1	V	12	2	16½	1½	35½	2	11	3½	4	11	3½	4	8	Opt	Opt	Opt	36	8½			
Armleder KWC-3½	4	1	1	V	10	1½	16½	1½	35½	2	11	3½	4	11	3½	4	8	Opt	Opt	Opt	36	8½			
Armleder HWB-2½	4	1	1	V	10½	1½	11½	1½	33½	2	13	3½	4	13	3½	4	4	Opt	Opt	Opt	32	10			
Armleder HWC-2½	3	1	1	V	8½	1½	11½	1½	34	1½	13	3½	4	13	3½	4	4	Opt	Opt	Opt	32	10			
Atterbury 20R-1½	4	1	1	V	8	1½	14	1½	38½	1½	11	3½	4	11	3½	4	4	122½	72½	211	34	9½			
Atterbury 22C-2½	4	1	1	V	10½	1½	16	1½	40½	1½	13	3½	4	13	3½	4	4	129½	78½	225	34	9½			
Atterbury 22D-3½	4	1	1	V	10½	1½	16	1½	40½	1½	15½	3½	4	15½	3½	4	4	142½	93½	242	37	8½			
Atterbury 8E-5	4	1	1	V	14	2	20½	2	40	2	17½	4	4	17½	4	4	4	167½	80½	263	37½	8½			
Autocar XXI-F-1½	4	1	1	V	5	1½	9½	1½	...	...	16½	2½	4	13½	2½	4	4	91	67	156	34	9½	
Autocar XXI-G-1½	4	1	1	V	5	1½	9½	1½	...	...	16½	2½	4	13½	2½	4	4	114	90	179	34	9½	
Autocar XXVI-M-6	3	1	1	V	3½	1½	3½	1½	49½	2	25½	2½	4	25½	2½	4	4	139½	80½	223½	34	10			
Autocar XXVI-L-4-6	3	1	1	V	3½	1½	3½	1½	49½	2	25½	2½	4	25½	2½	4	4	175½	116½	259½	34	10			
Autocar XXVII-H-3	3	1	1	V	3½	1½	3½	1½	47½	2	22½	2	4	22½	2	4	4	131½	76	213½	34	10½			
Autocar XXVII-K-3	3	1	1	V	3½	1½	3½	1½	47½	2	22½	2	4	22½	2	4	4	155½	100	237½	34	10½			
Available J-H-1½	4	1	1	V	11	1½	14	1½	40	2	48	2½	4	36	2½	4	2	120	80½	201½	32	9			
Available J-H-2	4	1	1	V	12	1½	14	1½	40	2	48	2½	4	36	2½	4	2	120	84½	212	32	9			
Available J-H-2½	3	1	1	V	11	1½	14	1½	40	2	13½	3½	4	13½	3½	4	4	144	85½	226½	32	9			
Available J-H-3½	4	1	1	V	12	1½	14	1½	42	2	16	3½	4	16	3½	4	4	168	106½	254½	36	9			
Available J-H-5	3	1	1	V	12	2	16	2	40	2	18	4	4	18	4	4	4	168	112½	263½	38	9			
Bessemer G-1	3	1	1	V	11½	2½	10	2½	42	1½	46	2½	2	44	2½	2	2	98½	58½	182½	34	...			
Bessemer H-2-1½	3	1	1	V	11½	2½	10	2½	43	1½	46	2½	2	44	2½	2	8	116	76	203	34	...			
Bessemer J2-2½	3	1	1	V	12	1½	5	1½	36	1½	18½	2½	4	18½	2½	4	8	142½	92½	229	34	...			
Bessemer K2-4	3	1	1	V	11½	2½	10	2½	39½	1½	55	3½	2	33	3½	2	1	157½	108	249	38	...			
Bethlehem KN-1	3	1	1	V	8½	2½	8	2½	35½	1½	20½	1½	2	20½	1½	2	2	89½	56½	175	32	10½			
Bethlehem GN-2	3	1	1	V	8½	2½	9½	2½	40½	1½	51	2½	1	37	2½	1	1	116½	74	208½	34½	9½			
Bethlehem HN-3	3	1	1	V	8½	2½	9½	2½	40½	1½	61½	3½	1	47	3½	1	1	134½	81½	226½	34½	8½			
Bets J3-1	3	1	1	V	12	1½	17	1½	38½	1½	11	3	4	11	3	4	4	126	90	215	34	10			
Bets D3-2½	3	1	1	V	12	2½	12	2½	33½	1½	12	3½	4	12	3½	4	4	Opt.	...	...	34	...	
Brinton C-1½	3	1	1	V	11	1½	13	1½	33	1½	39	2½	1	38	2½	1	1	118	...	...	35	...	
Brinton D-2½	3	1	1	V	11	1½	13	1½	33	1½	13	3½	2	13	3½	2	2	135½	...	...	35	...	
Brookway S7-1½	3	1	1	V	10½	2½	5½	2½	39	1½	20	2	4	20	2	4	4	118	72	118½	32	...			
Brookway K-2½	4	1	1	V	6½	1½	13	1½	34	1½	13	3½	4	13	3½	4	4	142	89½	123½	34	...			
Brookway R-5-3½	4	1	1	V	9½	1½	14	1½	34	1½	15½	3½	4	15½	3½	4	4	176	102½	175	36	...			
Brookway T-6-5	4	1	1	V	13	2	22	2	40½	2	17½	4	4	17½	4	4	4	176	104½	176	36	...			
Buffalo 9, 6	4	1	1	V	7	1½	13	1½	41½	2	21	2½	4	21	2½	4	4	124	82½	224	34	9½			
Casco A-1	4	1	1	V	12	1½	14½	1½	34½	1½	48½	2½	1	48	2½	1	1	104	61	192½	34	10			
Chevrolet Sup. Lt. Del.	3	1	1	V	7½	1½	5½	1½	29½	1½	29½	2½	2	28½	2½	2	2	Opt.	Opt.	Opt.	35	9½			
Chevrolet Utility Exp.	3	1	1	V	7½	1½	5½	1½	29½	1½	37	2½	2	32½	2½	2	2	Opt.	Opt.	Opt.	37	10			
Chicago 20-1½	4	1	1	V	12	1½	15	1½	34½	1½	21	2½	4	10	2	4	4	145½	75½	211½	32	...			
Chicago 25-2½	4	1	1	V	12	1½	15	1½																	

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME							
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length		Width					
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	★ Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis	
Clydesdale 65EX 2½-3	3	1½	1½	1½	V	9	1½	14	1½	42	1½	F	13½	3½	¼	4	13½	3½	¼	4	132	.....	.....	33½	.....
Clydesdale 65X-2½-3	3	1½	1½	1½	V	11	1½	11	1½	11	1½	F	13½	3½	¼	4	13½	3½	¼	4	137	.....	.....	33½	.....
Clydesdale 42-1½-2	3	1½	1½	1½	V	15	2	12	2	41	1½	F	12	3	¼	4	12	3	¼	4	117	.....	.....	34	.....
Clydesdale 20-1½-1½	3	1½	1½	1½	V	15	2	12	2	41	1½	V	11½	3	¼	4	11½	3	¼	4	95	.....	.....	34	.....
Clydesdale 18-1½-1½	3	1½	1½	1½	V	15	2	12	2	41	1½	V	11½	2½	¼	4	11½	2½	¼	4	95	.....	.....	34	.....
Clydesdale 10-1½-1½	3	1½	1½	1½	V	9	2	9	2	41	1½	V	11½	2½	¼	4	11½	2½	¼	4	109	.....	.....	34	.....
Clydesdale 10A-1½-1½	3	1½	1½	1½	V	9	2	9	2	41	1½	V	11½	2½	¼	4	11½	2½	¼	4	109	.....	.....	34	.....
Columbia H-1½	3	1½	1½	1½	V	10	1½	12	1½	39	1½	F	23	1½	¼	4	23	1½	¼	4	Opt	Opt	Opt	32½	10	
Columbia G-2½	3	1½	1½	1½	V	10	1½	12	1½	39	1½	F	26	2	¼	4	26	2	¼	4	Opt	Opt	Opt	32½	9	
Columbia K-3	3	1½	1½	1½	V	11	1½	13	1½	42	2	F	26	2	¼	4	26	2	¼	4	Opt	Opt	Opt	32½	9	
Commerce 11 2000	3	1½	1½	1½	V	10	2	10	2	44	2	F	50	2	¼	2	48½	2	¼	2	92½	53½	193	34	9	
Commerce 14B-3000	4	1½	1½	1½	V	10	2	9½	1½	39½	2	F	11	3½	¼	4	11	3½	¼	4	117	75	210	34	8½	
Commerce 25B-5000	4	1½	1½	1½	V	9½	1½	15½	1½	42	1½	F	13	3½	¼	4	13	3½	¼	4	132	84	228½	34	12½	
Concord E-1	4	1½	1½	1½	H	7	1½	9½	1½	33½	2	F	12	3	¼	4	12	3	¼	4	.....	.....	.....	32½	.....
Concord G-2	4	1½	1½	1½	H	7	1½	9½	1½	33½	2	F	13½	3½	¼	4	13½	3½	¼	4	.....	.....	.....	32½	.....
Concord H-2	4	1½	1½	1½	H	7	1½	9½	1½	33½	2	F	12	3	¼	4	12	3	¼	4	.....	.....	.....	32½	.....
Concord J-2½	4	1½	1½	1½	H	7	1½	9½	1½	33½	2	F	13½	3½	¼	4	13½	3½	¼	4	.....	.....	.....	32½	.....
Concord JL-3	4	1½	1½	1½	H	8	1½	9½	1½	33½	2	F	13½	3½	¼	4	13½	3½	¼	4	.....	.....	.....	32½	.....
Corbitt S-3	3	1½	1½	1½	H	8	2	14	2	38	1½	F	16½	1½	¼	4	16½	1½	¼	4	103	59	196	34	11½	
Corbitt E-1	3	1½	1½	1½	H	9	2	12	2	41	1½	F	16½	1½	¼	4	16½	1½	¼	4	104	62	198	34	11½	
Corbitt D-1½	3	1½	1½	1½	V	11	1½	15	1½	46	1½	F	18	2	¼	4	18	2	¼	4	110	72	206	34	10	
Corbitt C-2	3	1½	1½	1½	V	13	1½	15	1½	46	1½	F	22½	2½	¼	4	22½	2½	¼	4	132	78	230	35	10½	
Corbitt B-2½	3	1½	1½	1½	V	13	1½	15	1½	46	1½	F	22½	2½	¼	4	22½	2½	¼	4	136	78	232	35	10½	
Corbitt R-2½-3	3	1½	1½	1½	V	14	1½	8	1½	46	1½	F	22½	2½	¼	4	22½	2½	¼	4	153	92	254	35	10½	
Corbitt A-3½-4	3	1½	1½	1½	V	14	1½	8	1½	46	1½	F	21	2	¼	4	21	2	¼	4	168	106	266	35	9	
Corbitt AA-5	3	1½	1½	1½	V	13	2	14	2	36	2	F	68½	3	¼	2	68½	3	¼	2	168	106	268	38	10	
Day-Elder AN-1½	3	1½	1½	1½	V	6½	1½	7	1½	34½	1½	F	10	3	¼	4	10	3	¼	4	106½	62½	191	35	.....
Day-Elder BN-2	3	1½	1½	1½	V	4	1½	12½	1½	41	1½	F	11½	3	¼	4	11½	3	¼	4	118½	78½	202½	35	.....
Day-Elder DN-2½	3	1½	1½	1½	V	4	1½	12½	1½	43	1½	F	13½	3½	¼	4	13½	3½	¼	4	122½	72½	212½	35	.....
Day-Elder CN-3	3	1½	1½	1½	V	10½	2	12½	1½	37	2	F	13½	3½	¼	4	13½	3½	¼	4	123½	77½	216	35	.....
Day-Elder FN-4	3	1½	1½	1½	V	7½	1½	12½	1½	43	1½	F	15½	3½	¼	4	15½	3½	¼	4	120½	81½	214½	35	.....
Day-Elder EN-5-6	4	1½	1½	1½	V	12½	2	12½	1½	38	2	F	17	4	¼	4	17	4	¼	4	154	94	253	37	.....
Defiance G2-1½	3	1½	1½	1½	H	10	2	8	2	40	1½	F	20	1½	¼	4	20	1½	¼	4	90	56	179½	34	.....
Defiance GL2-1½	3	1½	1½	1½	H	10	2	8	2	40	1½	F	20	1½	¼	4	20	1½	¼	4	119½	76½	203	34	.....
Defiance D-2-1½	3	1½	1½	1½	H	10	2	8	2	40	1½	F	45	2½	¼	1	43	2½	¼	1	119½	76½	203	34	.....
Defiance E2-2	3	1½	1½	1½	H	10	2	8	2	40	1½	F	52	2½	¼	1	37	2½	¼	1	119½	76½	203	34	.....
Defiance EL-2-2	3	1½	1½	1½	H	10	2	8	2	40	1½	F	52	2½	¼	1	37	2½	¼	1	136½	93½	220	34	.....
Defiance H2-3	3	1½	1½	1½	V	11½	1½	9	1½	42½	1½	F	61	2½	¼	1	47	2½	¼	1	125½	82½	220	34	.....
Defiance HL-2-3	3	1½	1½	1½	V	11½	1½	9	1½	42½	1½	F	61	2½	¼	1	47	2½	¼	1	143½	100½	238	34	.....
Defiance H-3	3	1½	1½	1½	V	11½	1½	9	1½	42½	1½	F	61	2½	¼	1	47	2½	¼	1	101½	66½	190	34	.....
Diamond T-75-¾	3	1½	1½	1½	V	8	1½	10½	1½	33½	1½	F	22	2½	¼	2	46½	2½	¼	2	1	90	57½	182½	34
Diamond T-O3-1-1½	3	1½	1½	1½	V	9	1½	6	1½	35	2	F	48	3	¼	4	33	3	¼	4	100	.....	.....	34	.....
Diamond T-T-1½	3	1½	1½	1½	V	9	1½	6	1½	35	2	F	11½	3½	¼	4	11½	3½	¼	4	Opt	.....	.....	34	.....
Diamond T-U2-2½	3	1½	1½	1½	V	9	1½	6	1½	35	2	F	13½	3½	¼	4	13½	3½	¼	4	Opt	.....	.....	34	.....
Diamond TK-3½	3	1½	1½	1½	V	10	1½	10	1½	35	2	F	15½	3½	¼	4	15½	3½	¼	4	Opt	.....	.....	37	.....
Diamond T-S-5	3	1½	1½	1½	V	9	2	21	2	40½	2	F	17½	4	¼	4	17½	4	¼	4	Opt	.....	.....	37	.....
Diehl A	4	1½	1½	1½	V	11	2	8	2	41	2	F	28	2½	¼	2	27	2	¼	2	90	48	174	34	11	
Dixon Model D	4	1½	1½	1½	V	11	2	9	2	42	2	F	13	3½	¼	4	13	3½	¼	4	126	71	221½	34½	9½	
Dixon Model C	4	1½	1½	1½	V	11	2	9	2	42	2	F	13	3½	¼	4	13	3½	¼	4	Opt	.....	.....	34½	9½
Dixon Model A	4	1½	1½	1½	V	12	2	10	2	42	2	F	13	3½	¼	4	13	3½	¼	4	Opt	.....	.....	36	9½
Dodge Brothers ¾	4	1½	1½	1½	V	9	1½	7½	1½	34½	1½	F	10½	2½	¼	4	14½	1½	¼	4	.....	.....	.....	34	11
D-Olt	3	1½	1½	1½	H	18	2	36	2	36	2	F	42	3	¼	2	42	3	¼	2	240	68	166	34	11	
Dorris K-4-2	3	1½	1½	1½	V	2½	1½	6½	1½	42½	2	F	13½	3½	¼	4	13½	3½	¼	4	142½	98½	233½	34	9	
Dorris K7-3½	...</																									

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length		Width		
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
G.M.C. K-41.....	4	1 1/4	1 1/4	1 1/4	V	10	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	V	13	3 1/4	1 1/4	4	13	3 1/4	1 1/4	4	Opt	Opt	Opt	33	9 1/2
G.M.C. K-71.....	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	V	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	Opt	Opt	Opt	38	10 1/2
G.M.C. K-101.....	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	35 1/4	1 1/4	V	17 1/4	3 1/4	1 1/4	4	17 1/4	3 1/4	1 1/4	4	Opt	Opt	Opt	38	9 1/2
Gotfredson 20-1.....	4	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	10 1/4	1 1/4	32 1/4	1 1/4	V	11 1/4	2 1/4	1 1/4	4	11 1/4	2 1/4	1 1/4	4	88 1/4	56 1/4	182 1/4	32	11 1/2
Gotfredson 40-1 1/2-2.....	4	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	13 1/4	1 1/4	32 1/4	1 1/4	V	12 1/4	2 1/4	1 1/4	4	12 1/4	2 1/4	1 1/4	4	120 1/4	69 1/4	214 1/4	32 1/2	12 1/2
Gotfredson 50-2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	16 1/4	1 1/4	41 1/4	1 1/4	V	13 1/4	3 1/4	1 1/4	4	13 1/4	3 1/4	1 1/4	4	127 1/4	81 1/4	222 1/4	33	9 1/2
Gotfredson 80-4.....	4	1 1/4	1 1/4	1 1/4	V	14 1/4	1 1/4	18 1/4	1 1/4	43 1/4	1 1/4	V	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	157 1/4	89 1/4	247 1/4	35	9 1/2
Gotfredson 100-5.....	4	1 1/4	1 1/4	1 1/4	V	14 1/4	1 1/4	19 1/4	1 1/4	42 1/4	1 1/4	V	18 1/4	4 1/4	1 1/4	4	18 1/4	4 1/4	1 1/4	4	155 1/4	89 1/4	261 1/4	38	9 1/2
Graham Bros. BA.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	7 1/4	1 1/4	34 1/4	1 1/4	F	50 1/4	2 1/4	1 1/4	2	20 1/4	2 1/4	1 1/4	4	96 1/4	56 1/4	202 1/4	34	10 1/2
Graham Bros. CA.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	7 1/4	1 1/4	34 1/4	1 1/4	F	50 1/4	2 1/4	1 1/4	2	20 1/4	2 1/4	1 1/4	4	96 1/4	56 1/4	202 1/4	34	10 1/2
Graham Bros. DA.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	7 1/4	1 1/4	34 1/4	1 1/4	F	50 1/4	2 1/4	1 1/4	2	20 1/4	2 1/4	1 1/4	4	96 1/4	56 1/4	202 1/4	34	10 1/2
Graham Bros. EA.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	7 1/4	1 1/4	34 1/4	1 1/4	F	50 1/4	2 1/4	1 1/4	2	20 1/4	2 1/4	1 1/4	4	96 1/4	56 1/4	202 1/4	34	10 1/2
Graham Bros. FA.....	3	1 1/4	1 1/4	1 1/4	V	9 1/4	1 1/4	7 1/4	1 1/4	34 1/4	1 1/4	F	50 1/4	2 1/4	1 1/4	2	20 1/4	2 1/4	1 1/4	4	132 1/4	74 1/4	238 1/4	34	10 1/2
Gramm-Pioneer 10 Speed-1.....	3	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	14 1/4	1 1/4	29 1/4	1 1/4	F	48 1/4	2 1/4	1 1/4	2	26 1/4	2 1/4	1 1/4	1	97 1/4	54 1/4	180 1/4	30 1/4	10 1/2
Gramm-Pioneer 15-1 1/2-2.....	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	6 1/4	1 1/4	39 1/4	1 1/4	F	48 1/4	2 1/4	1 1/4	2	45 1/4	1 1/4	1 1/4	2	120 1/4	74 1/4	205 1/4	32	.....
Gramm-Pioneer 65-1 1/2-2.....	3	1 1/4	1 1/4	1 1/4	V	10 1/4	1 1/4	6 1/4	1 1/4	39 1/4	1 1/4	F	19 1/4	1 1/4	1 1/4	4	19 1/4	1 1/4	1 1/4	4	120 1/4	74 1/4	205 1/4	32	.....
Gramm-Pioneer 125-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	4 1/4	1 1/4	12 1/4	1 1/4	32 1/4	1 1/4	F	8 1/4	5 1/4	1 1/4	2	45 1/4	2 1/4	1 1/4	4	126 1/4	77 1/4	214 1/4	32	.....
Gramm-Pioneer 30-3.....	3	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	33 1/4	1 1/4	F	22 1/4	2 1/4	1 1/4	4	22 1/4	2 1/4	1 1/4	4	129 1/4	81 1/4	226 1/4	36	.....
Gramm-Pioneer 75P-3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	33 1/4	1 1/4	F	22 1/4	2 1/4	1 1/4	4	22 1/4	2 1/4	1 1/4	4	129 1/4	81 1/4	226 1/4	36	.....
Gramm-Pioneer 40-4.....	3	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	9 1/4	1 1/4	33 1/4	1 1/4	F	28 1/4	2 1/4	1 1/4	4	28 1/4	2 1/4	1 1/4	4	144 1/4	87 1/4	240 1/4	36	.....
Gramm-Pioneer 50-5-6.....	3	1 1/4	1 1/4	1 1/4	V	23 1/4	1 1/4	13 1/4	1 1/4	40 1/4	1 1/4	F	32 1/4	2 1/4	1 1/4	4	32 1/4	2 1/4	1 1/4	4	132 1/4	97 1/4	263 1/4	36	.....
Grass Premier 40A.....	3	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	14 1/4	1 1/4	29 1/4	1 1/4	F	22 1/4	1 1/4	1 1/4	4	48 1/4	2 1/4	1 1/4	2	98 1/4	70 1/4	192 1/4	31	.....
Grass Premier 60A1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	14 1/4	1 1/4	16 1/4	1 1/4	29 1/4	1 1/4	F	48 1/4	2 1/4	1 1/4	2	47 1/4	1 1/4	1 1/4	2	108 1/4	66 1/4	204 1/4	31	.....
Grass Premier 70A2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	14 1/4	1 1/4	16 1/4	1 1/4	29 1/4	1 1/4	F	48 1/4	2 1/4	1 1/4	2	47 1/4	1 1/4	1 1/4	2	120 1/4	95 1/4	214 1/4	31	.....
Grass Premier 90A3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	11 1/4	1 1/4	11 1/4	1 1/4	40 1/4	1 1/4	F	15 1/4	3 1/4	1 1/4	4	15 1/4	3 1/4	1 1/4	4	95 1/4	83 1/4	192 1/4	35	.....
Gray N-1 1/2.....	3	1 1/4	1 1/4	1 1/4	H	9 1/4	1 1/4	2 1/4	1 1/4	34 1/4	1 1/4	F	27 1/4	1 1/4	1 1/4	2	19 1/4	1 1/4	1 1/4	1	112 1/4	112 1/4	35 1/4	9	.....
Gray T-1.....	3	1 1/4	1 1/4	1 1/4	H	9 1/4	1 1/4	2 1/4	1 1/4	34 1/4	1 1/4	F	20 1/4	2 1/4	1 1/4	2	19 1/4	1 1/4	1 1/4	1	152 1/4	152 1/4	32 1/4	9	.....
G. W. W. Super.....	3	1 1/4	1 1/4	1 1/4	V	8 1/4	1 1/4	17 1/4	1 1/4	37 1/4	1 1/4	F	49 1/4	2 1/4	1 1/4	2	47 1/4	1 1/4	1 1/4	2	89 1/4	72 1/4	192 1/4	32	11 1/4
Harvey WOA-2.....	4	1 1/4	1 1/4	2 1/4	V	11 1/4	2 1/4	14 1/4	1 1/4	35 1/4	2 1/4	F	45 1/4	2 1/4	1 1/4	2	45 1/4	2 1/4	1 1/4	2	139 1/4	87 1/4	242 1/4	32	10 1/2
Harvey WFB-2 1/2.....	4	1 1/4	1 1/4	2 1/4	V	11 1/4	2 1/4	14 1/4	1 1/4	35 1/4	2 1/4	F	50 1/4	2 1/4	1 1/4	2	50 1/4	2 1/4	1 1/4	2	139 1/4	87 1/4	242 1/4	32	10 1/2
Harvey WHB-3 1/2.....	4	1 1/4	1 1/4	2 1/4	V	11 1/4	2 1/4	14 1/4	1 1/4	36 1/4	2 1/4	F	20 1/4	4 1/4	1 1/4	4	20 1/4	3 1/4	1 1/4	4	151 1/4	85 1/4	258 1/4	35	9 1/2
Harvey WFT-6.....	4	1 1/4	1 1/4	2 1/4	V	11 1/4	2 1/4	14 1/4	1 1/4	36 1/4	2 1/4	F	50 1/4	2 1/4	1 1/4	2	50 1/4	2 1/4	1 1/4	2	84 1/4	52 1/4	189 1/4	32	10 1/2
Harvey WHT-10.....	4	1 1/4	1 1/4	2 1/4	V	11 1/4	2 1/4	14 1/4	1 1/4	36 1/4	2 1/4	F	20 1/4	4 1/4	1 1/4	4	20 1/4	3 1/4	1 1/4	4	86 1/4	52 1/4	191 1/4	35	9 1/2
Hawkeye O.....	4	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	9 1/4	1 1/4	1 1/4	1 1/4	F	20 1/4	4 1/4	1 1/4	2	20 1/4	3 1/4	1 1/4	4	86 1/4	52 1/4	191 1/4	35	.....
Hawkeye K.....	4	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	9 1/4	1 1/4	1 1/4	1 1/4	F	20 1/4	4 1/4	1 1/4	2	20 1/4	3 1/4	1 1/4	4	86 1/4	52 1/4	191 1/4	35	.....
Hawkeye M.....	4	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	9 1/4	1 1/4	1 1/4	1 1/4	F	20 1/4	4 1/4	1 1/4	2	20 1/4	3 1/4	1 1/4	4	86 1/4	52 1/4	191 1/4	35	.....
Hawkeye N.....	4	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	9 1/4	1 1/4	1 1/4	1 1/4	F	20 1/4	4 1/4	1 1/4	2	20 1/4	3 1/4	1 1/4	4	86 1/4	52 1/4	191 1/4	35	.....
Hug T.....	4	1 1/4	1 1/4	1 1/4	V	14 1/4	1 1/4	13 1/4	1 1/4	1 1/4	1 1/4	F	48 1/4	2 1/4	1 1/4	2	48 1/4	2 1/4	1 1/4	2	Opt	Opt	Opt	35 1/2	.....
Hurlburt A1 1/2-2.....	3	1 1/4	1 1/4	1 1/4	V	12 1/4	1 1/4	13 1/4	1 1/4	1 1/4	1 1/4	F	22 1/4	2 1/4	1 1/4	2	22 1/4	2 1/4	1 1/4	2	132 1/4	132 1/4	35 1/4	34	.....
Hurlburt B2 1/2.....	3	1 1/4	1																						

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING				FRAME												
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length		Width										
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis		
Lange F 3½	4	4	1½	1½	V	5	1½	15½	1½	45	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	139	88	227½	37	9½	
Lange E-2½	4	4	1½	1½	V	7	1½	14	1½	42	1½	F	11½	3½	¼	4	4	11½	3½	¼	4	139	85	229	33	10	
Larabee X2-1-1½ Ton.	3	3	1½	1½	V	6	1½	14	1½	34	1½	F	50	2	¼	4	4	50	2	¼	4	108	59	205	34	11	
Larabee J4-1½-2½ Ton.	4	4	1½	1½	V	6	1½	10	1½	41	1½	F	19	2	¼	4	4	19	2	¼	4	108	67½	199	34	10½	
Larabee K5-2½-3½ Ton.	4	4	1½	1½	V	6	1½	11	1½	45½	1½	F	21	2	¼	4	4	21	2	¼	4	Opt	Opt	Opt	34	9½	
Larabee L4-3½-4½ Ton.	4	4	1½	1½	V	6	1½	11	1½	45½	1½	F	21	2	¼	4	4	21	2	¼	4	Opt	Opt	Opt	36	9	
Maccor EX	3	4	1½	1½	V	4½	1½	15	1½	35½	1½	F	50	2	¼	4	4	48	2	¼	4	101½	68	192½	37	9½	
Maccor L-1, 1½	4	4	1½	1½	V	4	1½	19	1½	35	1½	F	11½	3½	¼	4	4	11½	3½	¼	4	125½	74½	228½	34	10½	
Maccor H-1, 3	4	4	1½	1½	V	4	1½	19	1½	37½	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	139½	79½	243½	34	10	
Maccor M-2, 4	4	4	1½	1½	V	8	1½	16½	1½	40½	1½	F	18	4	¼	4	4	18	4	¼	4	153½	91½	257½	34	8½	
Maccor G-1, 5	4	4	1½	1½	V	4	1½	19	1½	35	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	163½	99½	278	37½	10	
Maccor HT	4	4	1½	1½	V	4	1½	19	1½	35	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	Opt	Opt	Opt	34	10	
Mack AB-1½, 2, 2½ T-Ch	3	3	1½	1½	V	7½	1½	5	1½	36½	1½	F	12	6	¼	4	4	12	6	¼	4	Opt	Opt	Opt	34	10	
Mack Dual R'd'n-1½, 2, 2½	3	3	1½	1½	V	7½	1½	5	1½	36½	1½	F	18½	4	¼	4	4	12	6	¼	4	77	Opt	Opt	37½	10	
Mack AB-Tractor-5	3	3	1½	1½	V	5	1½	3	1½	2	1½	F	16½	3	¼	4	4	20½	3	¼	4	Opt	Opt	Opt	37½	10	
Mack AC-3½, 5, 6½, 7½	3	3	1½	1½	V	5	1½	3	1½	2	1½	F	16½	3	¼	4	4	20½	3	¼	4	87	76½	212½	30	10	
Mack AC-Trac-7, 10, 13, 15	3	3	1½	1½	V	11½	2	14½	1½	30½	1½	F	42	2½	¼	4	4	40	2½	¼	4	130	Opt	Opt	34½	10	
Mason Road King	3	3	1½	1½	V	13½	2	12½	1½	31	1½	F	12	3½	¼	4	4	12	3½	¼	4	117½	Opt	Opt	34	10	
Master 22-1½	4	4	1½	1½	V	13½	2	12½	1½	31	1½	F	16	3½	¼	4	4	16	3½	¼	4	147½	Opt	Opt	36½	10	
Master 41-2½	4	4	1½	1½	V	13½	2	15	1½	35	1½	F	13½	4	¼	4	4	18	4	¼	4	162½	Opt	Opt	39	10	
Master 51-3½	4	4	1½	1½	V	13½	2	15	1½	35	1½	F	13½	4	¼	4	4	18	4	¼	4	162½	Opt	Opt	39	10	
Master 61-5	4	4	1½	1½	V	13½	2	15	1½	37	1½	F	31	1½	¼	4	4	24½	2	¼	4	102	Opt	Opt	36	10	
Master 64-5-6	4	4	1½	1½	V	7½	2½	3½	1½	36½	1½	F	11	2½	¼	4	4	11	2½	¼	4	102	Opt	Opt	197	33	10½
Maxwell 1½	3	3	1½	1½	V	6	1½	12	1½	40	1½	F	13½	3½	¼	4	4	8	8	¼	4	122	Opt	Opt	216	32	10½
Menominee Hurryton-1	3	3	1½	1½	V	3	1½	3	1½	37½	1½	F	13½	3½	¼	4	4	42½	2½	¼	4	146	Opt	Opt	224	32	10½
Menominee H-1½	3	3	1½	1½	V	3	1½	3	1½	37½	1½	F	47	2½	¼	4	4	52	2½	¼	4	102½	Opt	Opt	192	32	10½
Menominee D-2	3	3	1½	1½	V	9½	1½	10½	1½	33½	1½	F	69	3½	¼	4	4	149	2½	¼	4	149	Opt	Opt	246	38	9
Menominee HT-1½	3	3	1½	1½	V	3	1½	3	1½	40½	1½	F	15½	3½	¼	4	4	15½	3½	¼	4	108	Opt	Opt	208½	34	10
Menominee J-3, 5	3	3	1½	1½	V	3	1½	3	1½	37½	1½	F	49	2½	¼	4	4	46	2½	¼	4	108	Opt	Opt	208½	34	10
Menominee G-3½	3	3	1½	1½	V	8	1½	11½	1½	34	1½	F	12	3½	¼	4	4	12	3½	¼	4	132	Opt	Opt	226½	34	10
Moreland RR-1	3	3	1½	1½	V	8	1½	11½	1½	34	1½	F	12	3½	¼	4	4	12	3½	¼	4	132	Opt	Opt	226½	34	10
Moreland BX-1½	3	3	1½	1½	V	9	1½	14	1½	42	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	174	Opt	Opt	253	34	10
Moreland EX-2	3	3	1½	1½	V	9	1½	13	1½	42	1½	F	15½	3½	¼	4	4	15½	3½	¼	4	192	Opt	Opt	271	38	7
Moreland AX-3	3	3	1½	1½	V	8	1½	14½	1½	42	1½	F	49	2½	¼	4	4	46	2½	¼	4	156	Opt	Opt	256	34	7
Moreland RX-5	4	4	1½	1½	H	8	1½	11½	1½	34	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	152	Opt	Opt	254	34	8
Moreland RC-Bus	3	3	1½	1½	H	9	1½	13	1½	42	1½	F	15½	3½	¼	4	4	15½	3½	¼	4	171	Opt	Opt	271	44	7
Moreland EC-Bus	3	3	1½	1½	H	9	1½	13	1½	42	1½	F	15½	3½	¼	4	4	15½	3½	¼	4	171	Opt	Opt	271	44	7
Moreland AC-Bus	3	3	1½	1½	H	9	1½	13	1½	42	1½	F	15½	3½	¼	4	4	15½	3½	¼	4	171	Opt	Opt	271	44	7
Nash 2018-1-1½	4	4	1½	1½	V	3	1½	7½	1½	36	1	F	49½	2	¼	4	4	20	2½	¼	4	104½	61	193	30½	9½	
Nash 3018-2-2½	4	4	1½	1½	V	7	1½	14	1½	44	1½	F	50½	2	¼	4	4	20	2½	¼	4	118½	65	207	31½	9½	
Nash 4017-2-2½	3	3	1½	1½	V	16	2½	14	2½	40	1½	F	11	3	¼	4	4	11	3	¼	4	117½	85½	202½	38½	14½	
National R	3	3	1½	1½	V	16	2½	14	2½	40	1½	F	12	3½	¼	4	4	13½	3½	¼	4	116	57	204	34	10½	
National M	3	3	1½	1½	V	12	1½	18	1½	42	1½	F	16	3½	¼	4	4	16	3½	¼	4	123½	65	208	34	9½	
National T	3	3	1½	1½	V	10	1½	17	1½	40	1½	F	13½	3½	¼	4	4	14½	3½	¼	4	142	91	243	36	8½	
National NB-3½	3	3	1½	1½	V	8	1½	3½	1½	39½	1½	F	11½	3	¼	4	4	11½	3	¼	4	Opt	Opt	Opt	34	11	
Nelson & LeMoon G-1	4	4	1½	1½	V	8	1½	3½	1½	39½	1½	F	11½	3	¼	4	4	11½	3	¼	4	Opt	Opt	Opt	34	11	
Nelson & LeMoon G-1½	4	4	1½	1½	V	9	1½	3½	1½	41½	1½	F	12	3½	¼	4	4	12	3½	¼	4	Opt	Opt	Opt	34	11	
Nelson & LeMoon G-2	4	4	1½	1½	V	9	1½	3½	1½	41½	1½	F	13½	3½	¼	4	4	13½	3½	¼	4	Opt	Opt	Opt	34	11	
Nelson & LeMoon G-3	4	4	1½	1½	V	9	1½	3½	1½	41½	1½	F	16½	3½	¼	4	4	16½	3½	¼	4	Opt	Opt	Opt	34	11	
Nelson & LeMoon G-4	4	4	1½	1½	V	12	2	6	2	40½	1½	F	18	4	¼	4	4	18	4	¼	4	Opt	Opt	Opt	34	11	
N																											

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE										BRAKE LINING								FRAME						
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service				Emergency				Length			Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Perfection B.....	3	1 1/4	1 1/4	1 1/4	V	9	2	6	2	43 3/4	V	10	2 1/2	1 1/4	4	10	2 1/2	1 1/4	4	104 1/2	76 3/4	184	32	10 1/2	
Perfection C.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	2 1/2	6 1/2	2 1/2	41 1/2	V	10 1/2	2 1/2	1 1/4	4	10 1/2	2 1/2	1 1/4	4	117 1/2	78 3/4	217 1/2	34	10 1/2	
Perfection D.....	4	1 1/4	1 1/4	1 1/4	V	12	2 1/2	6 1/2	2 1/2	41 1/2	V	10	2 1/2	1 1/4	4	10	2 1/2	1 1/4	4	103 1/2	84 3/4	203 1/2	34	10 1/2	
Perfection E.....	4	1 1/4	1 1/4	1 1/4	V	12	2 1/2	6 1/2	2 1/2	40 3/4	V	12	2 1/2	1 1/4	4	12	2 1/2	1 1/4	4	116 1/2	80 3/4	205 1/2	38	12 1/2	
Perfection EA.....	4	1 1/4	1 1/4	1 1/4	V	12 1/2	2 1/2	6 1/2	2 1/2	40 3/4	V	12	2 1/2	1 1/4	4	12	2 1/2	1 1/4	4	146 1/2	110 3/4	235 1/2	38	12 1/2	
Pierce Arrow XA-2.....	3	1 1/4	1 1/4	1 1/4	V	16 1/2	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	125 1/2	70 3/4	225 1/2	34 1/2	8 1/2	
Pierce Arrow XB-3.....	3	1 1/4	1 1/4	1 1/4	V	16 1/2	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	125 1/2	70 3/4	225 1/2	34 1/2	8 1/2	
Pierce Arrow WC-4.....	3	1 1/4	1 1/4	1 1/4	V	11	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	133 1/2	78 3/4	237 1/2	38 1/2	7 1/2	
Pierce Arrow WD-5.....	3	1 1/4	1 1/4	1 1/4	V	11	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	133 1/2	78 3/4	237 1/2	38 1/2	7 1/2	
Pierce Arrow RE-6.....	3	1 1/4	1 1/4	1 1/4	V	11	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	139 1/2	84 3/4	243 1/2	38 1/2	8 1/2	
Pierce Arrow RF-7 1/2.....	3	1 1/4	1 1/4	1 1/4	V	16 1/2	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	139 1/2	84 3/4	243 1/2	38 1/2	8 1/2	
Pierce Arrow XB-TT.....	3	1 1/4	1 1/4	1 1/4	V	16 1/2	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	139 1/2	84 3/4	243 1/2	38 1/2	8 1/2	
Pierce Arrow WD-TT.....	3	1 1/4	1 1/4	1 1/4	V	11	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	139 1/2	84 3/4	243 1/2	38 1/2	8 1/2	
Pierce Arrow RF-TT.....	3	1 1/4	1 1/4	1 1/4	V	11	2 1/2	6 1/2	2 1/2	43 3/4	V	12 1/2	2 1/2	1 1/4	4	12 1/2	2 1/2	1 1/4	4	139 1/2	84 3/4	243 1/2	38 1/2	8 1/2	
Pioneer 59AA-1.....	3	1 1/4	1 1/4	1 1/4	V	13	2 1/2	6 1/2	2 1/2	35 1/2	F	14	2 1/2	1 1/4	4	14	2 1/2	1 1/4	4	102 1/2	74 3/4	210 1/2	30	8 1/2	
Pittsburgher A 1 1/2-2.....	3	1 1/4	1 1/4	1 1/4	V	6	2 1/2	6 1/2	2 1/2	43 3/4	F	24	2 1/2	1 1/4	4	24	2 1/2	1 1/4	4	126 1/2	84 3/4	220 1/2	32	10 1/2	
Pittsburgher C 2 1/2-3.....	3	1 1/4	1 1/4	1 1/4	V	6	2 1/2	6 1/2	2 1/2	43 3/4	F	26	2 1/2	1 1/4	4	26	2 1/2	1 1/4	4	136 1/2	84 3/4	220 1/2	32	10 1/2	
Pittsburgher D 3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	6	2 1/2	6 1/2	2 1/2	43 3/4	F	26	2 1/2	1 1/4	4	26	2 1/2	1 1/4	4	136 1/2	84 3/4	220 1/2	32	10 1/2	
Power F 1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	8	2 1/2	6 1/2	2 1/2	36 1/2	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	143 1/2	84 3/4	220 1/2	32	10 1/2	
Power F 2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	8	2 1/2	6 1/2	2 1/2	36 1/2	F	26 1/2	3 1/2	1 1/4	4	26 1/2	3 1/2	1 1/4	4	143 1/2	84 3/4	220 1/2	32	10 1/2	
Power C 3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	9	2 1/2	6 1/2	2 1/2	36 1/2	F	59	2 1/2	1 1/4	4	45	2 1/2	1 1/4	4	143 1/2	84 3/4	220 1/2	36	12	
Rainier R31-1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	9	2	6	2	43 3/4	V	11	2 1/2	1 1/4	4	11	2 1/2	1 1/4	4	86 1/2	50 3/4	181 1/2	34	11 1/2	
Rainier R29-1.....	3	1 1/4	1 1/4	1 1/4	V	9	2	6	2	43 3/4	V	11	2 1/2	1 1/4	4	11	2 1/2	1 1/4	4	96 1/2	57 3/4	190 1/2	34	10 1/2	
Rainier R36-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	8	1 1/2	14	1 1/2	40	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	111 1/2	72 3/4	206 1/2	34	9 1/2	
Rainier R28-2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/2	14	1 1/2	42	F	20	2 1/2	1 1/4	4	20	2 1/2	1 1/4	4	124 1/2	80 3/4	225 1/2	33	9 1/2	
Rainier R20-2 1/2-3.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/2	14	1 1/2	42	F	13	3 1/2	1 1/4	4	13	3 1/2	1 1/4	4	137 1/2	85 3/4	241 1/2	33	10	
Rainier R25-3 1/2-5.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/2	14	1 1/2	42	F	15 1/2	3 1/2	1 1/4	4	15 1/2	3 1/2	1 1/4	4	157 1/2	91 3/4	263 1/2	37	8 1/2	
Rainier R27-6-7.....	4	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/2	14	1 1/2	42	F	18	4	1 1/4	4	18	4	1 1/4	4	154 1/2	88 3/4	263 1/2	37	9 1/2	
Red Ball.....	3	1 1/4	1 1/4	1 1/4	V	8	2 1/2	6 1/2	2 1/2	42 1/2	F	58	2 1/2	1 1/4	4	58	2 1/2	1 1/4	4	167 1/2	104 3/4	267 1/2	34	10 1/2	
Reo F-2500 lbs.....	3	1 1/4	1 1/4	1 1/4	V	5 1/2	1 1/2	5 1/2	1 1/2	39 1/2	F	45 1/2	3	1 1/4	4	40	3	1 1/4	4	81 1/2	55 3/4	171 1/2	30	10 1/2	
Rowe CDW-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	18	1 1/2	16 1/2	1 1/2	37 1/2	2	20	2 1/2	1 1/4	4	20	2 1/2	1 1/4	4	139 1/2	81 3/4	224 1/2	33	9 1/2	
Rowe GSW-3.....	3	1 1/4	1 1/4	1 1/4	V	18	1 1/2	16 1/2	1 1/2	37 1/2	2	20	2 1/2	1 1/4	4	20	2 1/2	1 1/4	4	139 1/2	81 3/4	224 1/2	33	9 1/2	
Rowe HW-4.....	3	1 1/4	1 1/4	1 1/4	V	18	1 1/2	16 1/2	1 1/2	37 1/2	2	22	2 1/2	1 1/4	4	22	2 1/2	1 1/4	4	163 1/2	99 3/4	249 1/2	36	9	
Rowe FW-5.....	3	1 1/4	1 1/4	1 1/4	V	11	1 1/2	17 1/2	1 1/2	43 1/2	2	68	3	1 1/4	4	60	3	1 1/4	4	175 1/2	107 3/4	265 1/2	38 1/2	10 1/2	
Ruggles 15-1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	12 1/2	2	20	2	34 1/2	F	43 1/2	2	1 1/4	4	39	1 1/2	1 1/4	4	128 1/2	97 3/4	170 1/2	38 1/2	9 1/2	
Ruggles 20R-1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	2	13 1/2	1 1/2	35 1/2	F	48	2 1/2	1 1/4	4	46 1/2	2 1/2	1 1/4	4	96 1/2	55 3/4	186 1/2	34	11	
Ruggles 20AR-1 1/2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	2	13 1/2	1 1/2	35 1/2	F	48	2 1/2	1 1/4	4	46 1/2	2 1/2	1 1/4	4	104 1/2	65 3/4	194 1/2	34	11	
Ruggles 40-2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	2	13 1/2	1 1/2	35 1/2	F	47 1/2	2 1/2	1 1/4	4	33 1/2	2 1/2	1 1/4	4	134 1/2	75 3/4	224 1/2	34	8 1/2	
Ruggles 40H-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	7 1/2	2	13 1/2	1 1/2	35 1/2	F	58	2 1/2	1 1/4	4	44	2 1/2	1 1/4	4	134 1/2	75 3/4	224 1/2	34	9 1/2	
Sandow G-1.....	3	1 1/4	1 1/4	1 1/4	H	9	2	7	2	38 1/2	V	22 1/2	2 1/2	1 1/4	4	22 1/2	2 1/2	1 1/4	4	96	.....	205	34	10 1/2
Sandow C-G-1 1/2.....	3	1 1/4	1 1/4	1 1/4	H	9	2	7	2	38 1/2	V	22 1/2	2 1/2	1 1/4	4	22 1/2	2 1/2	1 1/4	4	120	.....	205	34	10 1/2
Sandow J-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	7	1 1/2	13	1 1/2	39 1/2	F	11 1/2	3 1/2	1 1/4	4	11 1/2	3 1/2	1 1/4	4	Opt	.....	.....	32	10 1/2
Sandow M-3 1/2.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/2	13	1 1/2	40	F	13 1/2	3 1/2	1 1/4	4	13 1/2	3 1/2	1 1/4	4	Opt	.....	.....	37	11

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE											BRAKE LINING						FRAME							
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service			Emergency			Length			Width			
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Super Truck 50.....	3	1 1/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	51 1/2	2 1/4	1/4	2	51 1/2	1 1/4	1/4	2	135	84	243	36	9 1/4
Super Truck 70.....	3	1 1/4	1 1/4	1 1/4	V	18 1/2	1 1/4	19	1 1/4	37 1/2	1 1/4	F	55 1/2	2 1/4	1/4	2	55 1/2	2 1/4	1/4	2	144	97 1/2	249	34	10 1/4
Super Truck 100.....	3	1 1/4	1 1/4	1 1/4	V	6	1 1/4	19	1 1/4	42	1 1/4	F	68	3	1/4	2	51 1/2	3	1/4	2	144	97 1/2	249	34	10
Traffic C-4000.....	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2	10 1/4	2	41 1/4	1 1/4	F	43 1/2	2 1/4	1/4	2	38	1 1/4	1/4	2	120 1/4	67 1/4	213 1/4	42	10 1/4
Traffic 6000.....	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2	10 1/4	2	41 1/4	1 1/4	F	52	3	1/4	2	47	2	1/4	2	120 1/4	69 1/4	213 1/4	34	11 1/4
Traffic Speedboy.....	3	1 1/4	1 1/4	1 1/4	H	10 1/2	2	10 1/4	2	40 1/4	1 1/4	F	43 1/2	2 1/4	1/4	2	38	1 1/4	1/4	2	120 1/4	66 1/4	213 1/4	34	11 1/4
Transport 15-1.....	3	1 1/4	1 1/4	1 1/4	V	10 1/2	2	13	2	40 1/4	1 1/4	F	48 1/2	2 1/4	1/4	2	46 1/2	1 1/4	1/4	2	113	70 1/4	201	34	10
Transport 26-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	9 1/4	2	16	1 1/4	34 1/4	1 1/4	F	48 1/2	2 1/4	1/4	2	46 1/2	1 1/4	1/4	2	120 1/4	72 1/4	210	34	11
Transport 36-2.....	4	1 1/4	1 1/4	1 1/4	V	10 1/4	2	16	1 1/4	33 1/4	1 1/4	F	11 1/4	3	1/4	4	48 1/2	2 1/4	1/4	2	127 1/4	78 1/4	218	34	11
Transport 61-3 1/2.....	4	1 1/4	1 1/4	1 1/4	V	9 1/4	2	16	1 1/4	33 1/4	1 1/4	F	11 1/4	3	1/4	4	48 1/2	2 1/4	1/4	2	127 1/4	78 1/4	218	34	11
Transport 75-5.....	4	1 1/4	1 1/4	1 1/4	V	12	2	16	1 1/4	35 1/2	1 1/4	F	50	2	1/4	2	58	2 1/4	1/4	2	150 1/4	93 1/4	251 1/4	36 1/2	10 1/2
Traylor B.....	4	1 1/4	1 1/4	1 1/4	V	10	2	6	1 1/4	38	1 1/4	F	50	2	1/4	2	50	2	1/4	2	117	75	204 1/4	34	10
Traylor C.....	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	36	1 1/4	F	50	2	1/4	2	50	2	1/4	2	122	73 1/4	218 1/4	34	10 1/4
Traylor D.....	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	36	1 1/4	F	56 1/2	2 1/4	1/4	2	56 1/2	2 1/4	1/4	2	142	76	241 1/4	34	9 1/4
Traylor F.....	4	1 1/4	1 1/4	1 1/4	V	14	2	14	1 1/4	37	1 1/4	F	59	2 1/2	1/4	2	59	2 1/2	1/4	2	165	92 1/4	273 1/4	35	11
Triangle AA-1.....	3	1 1/4	1 1/4	1 1/4	H	17	2	17	2	34	1 1/4	F	22 1/4	1 1/4	1	1	48	2 1/4	1	2	94	53	177	35	10
Triangle A-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/4	F	7 1/2	4	1/4	2	49	2	1/4	2	126	77 1/4	225	34	12
Triangle B 2 1/2.....	4	1 1/4	1 1/4	1 1/4	V	9	1 1/4	18	1 1/4	39 1/4	1 1/4	F	7 1/2	4	1/4	2	52	3	1/4	2	132	84 1/2	217 1/4	34	9
Triangle C-2.....	4	1 1/4	1 1/4	1 1/4	V	14	1 1/4	14 1/2	1 1/4	39 1/4	1 1/4	F	7 1/2	4	1/4	2	52	3	1/4	2	129	81	219 1/4	34	12
Ultimate A-2.....	4	1 1/4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	126	.....	.....	32 1/4	.....
Ultimate AJ2.....	4	1 1/4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	126	.....	.....	32 1/4	.....
Ultimate AJL-2.....	4	1 1/4	1 1/4	1 1/4	V	12	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	150	.....	.....	32 1/4	.....
Ultimate AJXL.....	4	1 1/4	1 1/4	1 1/4	V	12	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	192	.....	.....	32 1/4	.....
Ultimate B-3.....	4	1 1/4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	144	.....	.....	32 1/4	.....
Ultimate BL3.....	4	1 1/4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	17	4 1/2	1/4	2	17	4 1/2	1/4	2	192	.....	.....	32 1/4	.....
Ultimate D-5.....	4	1 1/4	1 1/4	1 1/4	V	11	2	8	1 1/4	34	2	F	51	2 1/4	1/4	2	51	2 1/4	1/4	2	180	.....	.....	37 1/2	.....
Union FW-2 1/2.....	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/4	2	F	26	4 1/4	1/4	1	52	3	1/4	1	133 1/2	77 1/4	224	32	11 1/4
Union H-4.....	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/4	2	F	56 1/2	3 1/4	1/4	1	32	4 1/4	1/4	1	157 1/2	.....	.....	34	.....
Union HW-4.....	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	37 1/4	2	F	26	4 1/4	1/4	1	24	4	1/4	2	157 1/2	98	264	34	13 1/4
United Highway Spec.....	3	1 1/4	1 1/4	1 1/4	V	14	2	19	2	34 1/4	1 1/4	F	48	2 1/4	1/4	2	46 1/2	2 1/4	1/4	2	92	53 1/2	182	33	9 1/4
United 30.....	3	1 1/4	1 1/4	1 1/4	V	10	2	13 1/2	2	32 1/2	1 1/4	F	48	2 1/4	1/4	2	46 1/2	2 1/4	1/4	2	115 1/2	75 1/2	206	33	10 1/2
United 35.....	3	1 1/4	1 1/4	1 1/4	V	10	2	13 1/2	2	32 1/2	1 1/4	F	47 1/2	2 1/4	1/4	2	46 1/2	2 1/4	1/4	2	115 1/2	76 1/2	206	33	9
United 50.....	3	1 1/4	1 1/4	1 1/4	V	10	2	13 1/2	2	32 1/2	1 1/4	F	47 1/2	2 1/4	1/4	2	46 1/2	2 1/4	1/4	2	132 1/2	80 1/2	226	33	8 1/2
United 60.....	3	1 1/4	1 1/4	1 1/4	V	10	2	13 1/2	2	32 1/2	1 1/4	F	57 1/2	2 1/4	1/4	2	42 1/2	2 1/4	1/4	2	132 1/2	80 1/2	226	33	8 1/2
United 80.....	4	1 1/4	1 1/4	1 1/4	V	8 1/2	2	13 1/2	1 1/4	42	2	F	57 1/2	2 1/4	1/4	2	42 1/2	2 1/4	1/4	2	141 1/2	81 1/4	237 1/4	34	9 1/4
U.S.U.-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 1/4	11 1/2	1 1/4	33	1 1/4	F	50 1/2	2 1/4	1/4	2	20	1 1/4	1/4	4	108	70	195	32	9 1/4
U.S.N.-1 1/2.....	3	1 1/4	1 1/4	1 1/4	H	11 1/2	2	9	1 1/4	37	1 1/4	F	50 1/2	2 1/4	1/4	2	46 1/2	1 1/4	1/4	2	120	82	211	34	11
U.S.N.W.-23-1 1/2-2.....	4	1 1/4	1 1/4	1 1/4	H	10 1/2	1 1/4	11 1/2	1 1/4	33	1 1/4	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	120	82	211	34	11
U.S.R.-2 1/2-3.....	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	10	1 1/4	35	1 1/4	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	144	94	241	34	9 1/4
U.S.S.-3 1/2-4.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	8	1 1/4	37	1 1/4	F	21	4	1/4	4	21	3	1/4	4	156	104	258	36	9
U.S.T. 5-7.....	4	1 1/4	1 1/4	1 1/4	V	15	2	13	1 1/4	38 1/4	2	F	62	3	1/4	4	33	4	1/4	1	168	103	278	36	10 1/4
U.S.S. Spec. 4-5.....	3	1 1/4	1 1/4	1 1/4	V	9	1 1/4	8	1 1/4	37	1 1/4	F	21	4	1/4	4	21	3	1/4	4	156	.....	.....	36	.....
Wachusett S-1.....	3	1 1/4	1 1/4	1 1/4	V	9 1/2	1 1/4	11	1 1/4	31 1/2	1 1/4	F	11 1/4	2 1/4	1/4	2	11 1/4	2 1/4	1/4	2	115	74	212	33	.....
Wachusett J-1 1/2.....	4	1 1/4	1 1/4	1 1/4	V	10	1 1/4	10 1/2	1 1/4	36	1 1/4	F	11 1/4	3	1/4	2	11 1/4	3	1/4	2	121	76	212	33	.....
Wachusett K2.....	4	1 1/4	1 1/4	1 1/4	V	11	1 1/4	11	1 1/4																

Continental Announces New Bus Engine

AS a part of its program to have available for the trade a Red Seal engine specially designed, developed and produced for every specific and justified need, Continental Motors Corp. announces a new engine for passenger bus service. This is the model 6B, a 3¼ by 5 in. six cylinder engine with a piston displacement of 331.6 cu. in. and an S. A. E. rating of 33.75 hp. On block test this engine develops 36 hp. at 1000 r. p. m., 43.5 hp. at 1000 ft. per minute piston speed, and peaks at 70 hp. at 2200 r. p. m.

The new engine is developed specially for inter-city express work where long non-stop runs are a part of the day's work and where speed, comfort, flexibility and freedom from vibration are essential to satisfactory performance.

There are a number of distinctive bus engine features which stand out as of exceptional interest. These include the following:

An extra deep cylinder head, providing an unusual volume of water, ample cooling facilities and greater strength. A cylinder head gasket constructed for heavy duty service. Extra large oil lines, and a gear type oil pump of exceptional size.

Spiral cut timing gears of extra wide face, two of the gears being of steel, case hardened, and the other two of hard, fine-grained semi-steel. Accessible end thrust adjustment for all timing gears. Pistons and connecting-rods designed for extra heavy service, the pistons having exceptional capacity for heat dissipation.

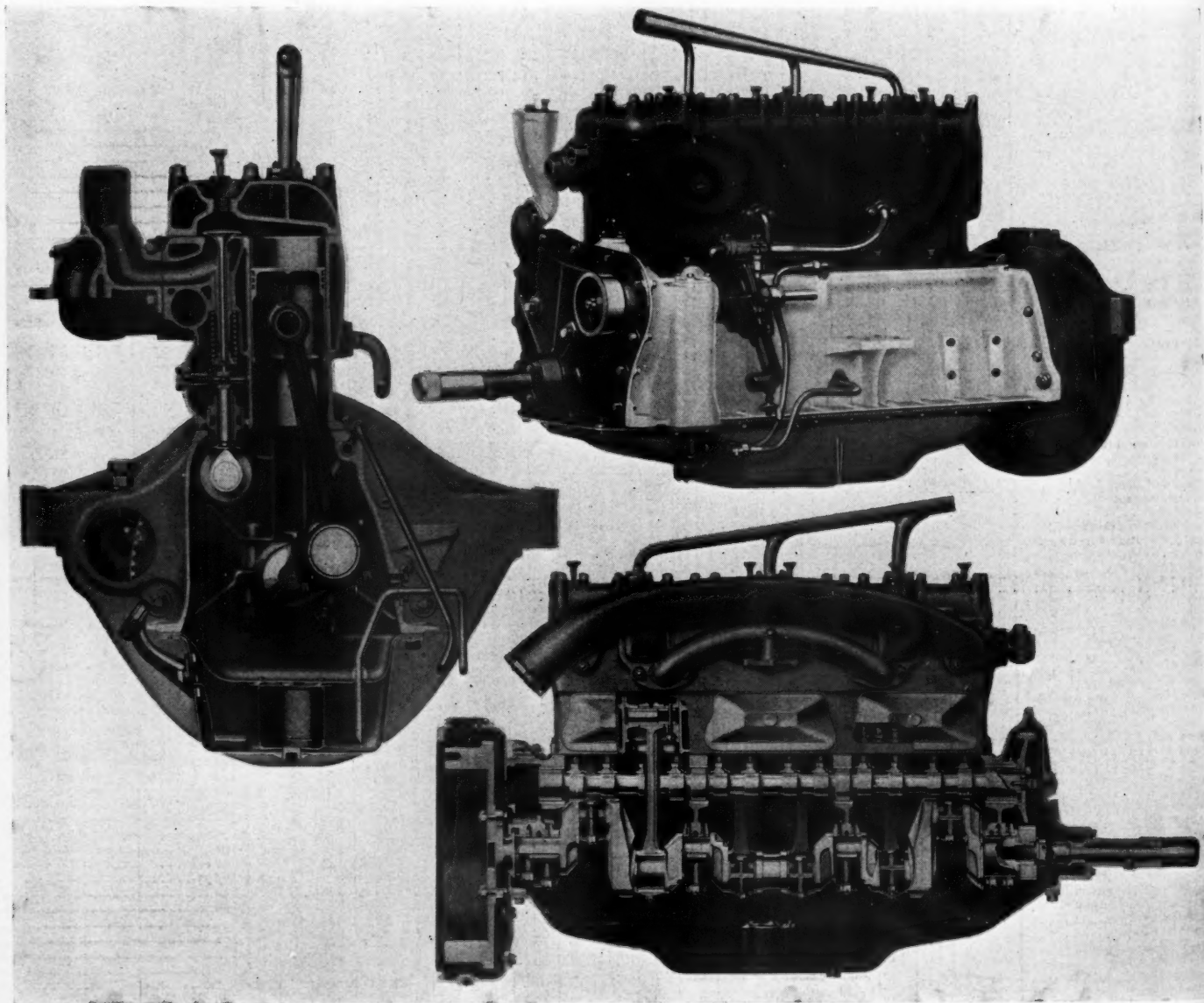
Crankshaft main bearing caps of drop forged steel. Connecting-rod lower end

bushing spun directly into the rods. A separate flywheel ring gear of steel, shrunk into place.

Silicrome valves, and easily replaceable bushings for valve stem and push rods. Adjustment for crankshaft end thrust.

S. A. E. standards are adhered to, and there is provision for mounting of special engine driven equipment such as generator, magneto, distributor, and if desired an air compressor.

The engine is of the four unit construction, embodying cast iron cylinder head and cylinder block, aluminum crankcase and pressed steel oil pan. The flywheel housing is a separate unit of cast iron, and the timing gear cover is also of this material. The engine is designed for three point support in the main frame of the chassis, no sub-frame being required.



Views of the New Continental Six Cylinder Bus Engine

Note the extra deep cylinder head which provides an unusual volume of water. The oil pump and oil lines are extra large to insure positive oiling. Intake and exhaust manifolds are cast integral



- Strong
- durable
- resilient
- light in weight
- free from flaws
- simple in construction
- low in price, quality considered

A truck wheel of *rolled* steel

THE most logical material to use in the manufacture of truck wheels is steel.

The Bethlehem Rolled Steel Truck Wheel is an all-steel wheel. Rim and spokes are formed integrally from a rolled steel I-beam punched and bent to shape and the spokes brought together at the hub.

This unique design of spoke and rim construction insures a secure bond throughout the whole wheel, and results in a high degree of uniformity in the construction of the finished product which combines the resiliency and light weight of wood wheels with the greater strength and durability of steel.

The result is a wheel that is suitable for all climates; that will not loosen up; will not suffer injury from the pressing on of tires, and will stand the wear and tear of anti-skid chain equipment.

Every stress in a Bethlehem Rolled Steel Truck Wheel is evenly distributed, and every shock is spread out evenly throughout the whole wheel and minimized.

It will pay you to equip your trucks
with Bethlehem Rolled Steel Truck Wheels.
Let us tell you more specifically about them.

BETHLEHEM STEEL COMPANY, General Offices: BETHLEHEM, PA.

Sales Offices in the Following Cities:

New York	Boston	Philadelphia	Baltimore	Washington	Atlanta	Buffalo	Pittsburgh
Cincinnati		Cleveland	Detroit	Chicago	St. Louis	San Francisco	

BETHLEHEM

One support is centrally located on the timing gear housing at the front, and the other two are cast with the flywheel housing.

The Crankshaft

The crankshaft is a four bearing type with bearing surfaces $2\frac{3}{8}$ in. in diameter. It is drilled for full pressure lubrication to all main and connecting-rod bearings. Upper halves of the main bearings are removable, and the lower halves are forged steel with cast babbit linings. Connecting-rods are drop forged of I-beam section, and have pressed-in bronze bushings in their upper ends. Pistons are of cast iron, $4\frac{1}{2}$ in. long, extra heavy and well ribbed for heat dissipation, and carefully balanced in sets. Each piston has three rings of $3/16$ in. diameter, all located above the piston pin. The latter is hollow, of $1\frac{1}{8}$ in. outside diameter, and secured in the piston by locking rings at either end, while it is prevented from turning by a heavy set screw.

Valves have a head diameter of $1\frac{15}{16}$ in. and a clear diameter of $1\frac{13}{16}$ in., while the valve lift on both intake and exhaust is $5/16$ in. Push rods are of cast iron and of the mushroom type. The camshaft, like the crankshaft, is a four bearing type, the bearings being pressed into the crankcase.

Intake and exhaust manifolds are cast together, forming a hot spot which assists materially in vaporization of low grade gases. The flywheel is of cast iron, weighing 90 lbs., and can be supplied for either plate or disk clutches. The flywheel housing is machined for No. 3 S. A. E. flange.

Lubrication System

Lubrication is by the full pressure system, the oil pump drawing its supply through a large fine mesh screen in the base chamber. Cooling water is pump circulated, the pump being of the centrifugal type and driven off the auxiliary shaft at $1\frac{1}{2}$ times crankshaft speed. A large fan driving pulley and an adjustable fan mounting bracket are supplied as part of the engine, but no fan is included on account of the variations in fan size with different installations.

Provision is made for various standard units as follows:

Carburetor, vertical outlet type, $1\frac{1}{2}$ in. S. A. E. flange, bolting to intake manifold.

Clutch, 12 in. plate or disk type, S. A. E. standard.

Spark plugs, $\frac{7}{8}$ -18 U. S. F. thread, located in cylinder head.

Magneto can be mounted on left side of the engine and driven off water pump shaft, either separately or in tandem with generator.

Distributor, S. A. E. type B, driven by vertical shaft and spiral gear.

Lighting generator, S. A. E. bracket mounting, on left side of engine and driven by water pump shaft.

Starting motor, S. A. E. sleeve type mounting, $3\frac{1}{2}$ in. diameter, on right side of flywheel housing, driving through teeth in flywheel.

The complete engine weighs 700 lbs. with standard equipment.

Electric Truck for Milk Delivery

PRODUCTION has been started by Detroit Electric Car Co. on a new type electric milk delivery truck for which important operating economies are claimed. The first of the company's product will go to the Detroit Creamery Co., one of the largest creamery companies of the country, which has made a series of tests under actual working conditions with the truck in charge of a creamery company driver.

The feature of the truck lies principally in its body construction. It is built close to the ground to eliminate time lost in getting in and out and is operated from three points, the front and the two sides, at each of which are located steering levers, operating control and foot brakes. Running-boards at the sides and decks, suspended below the frame at the front and rear, make for accessibility from all points. Design and mechanical patents have been applied for.

The new truck will be marketed by the Detroit Electric Car Co., direct and through dealers. The price of the truck is \$2,100 on which a maximum discount of 10 per cent is allowed to dealers and large users. This price is for the truck in lead ready for color. There is an additional charge of \$70 for a 42 cell 13 plate battery, and \$140 for a 42 cell 15 plate battery. Batteries have 3-yr. guarantee.

In placing the truck on the market the company declares it to be worked out entirely from the point of increasing the efficiency of the vehicle operator. Half of the truck load is accessible from the running-boards, from which also the truck may be operated through its entire route without the necessity of entering.

The top of the truck is low and is designed to carry empties, this simplifying the work by getting them out of the way and yet carrying them along, instead of picking them up later from where they are

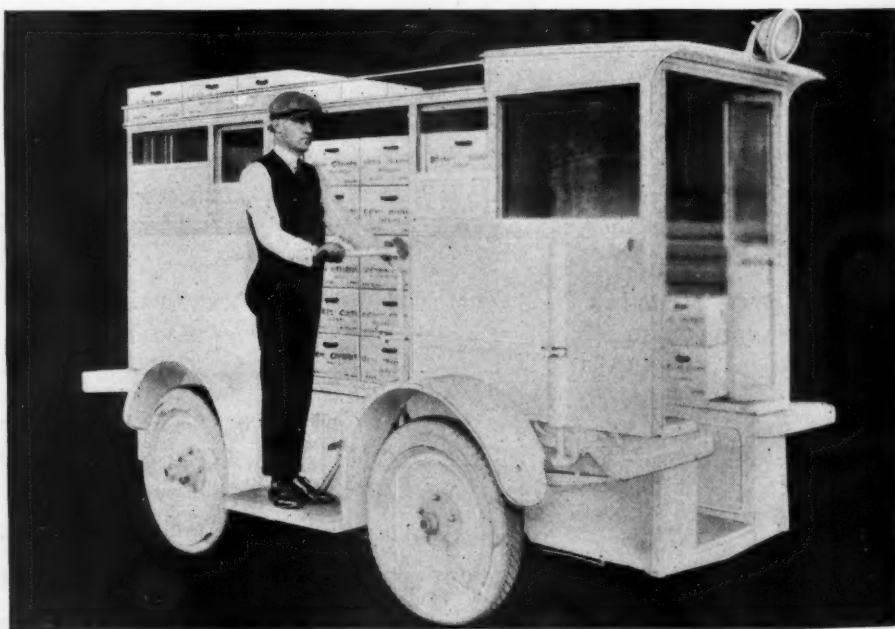
left along the route as in some present methods of operation. Forty cases of milk can be carried in regular service but room is provided for 50. The theory is that through the convenience of arrangement the operator will be able to deliver a 50 per cent larger load without increased fatigue.

The truck is designed to use several different sizes of batteries depending upon the load to be carried and the route to be covered. As it costs money to carry heavier batteries than actually needed, the 42 cell 11 plate battery is declared correct for the average route, while a 42 cell 13 plate is needed for larger routes and for 40 to 45 mile routes a 42 cell 15 plate is recommended.

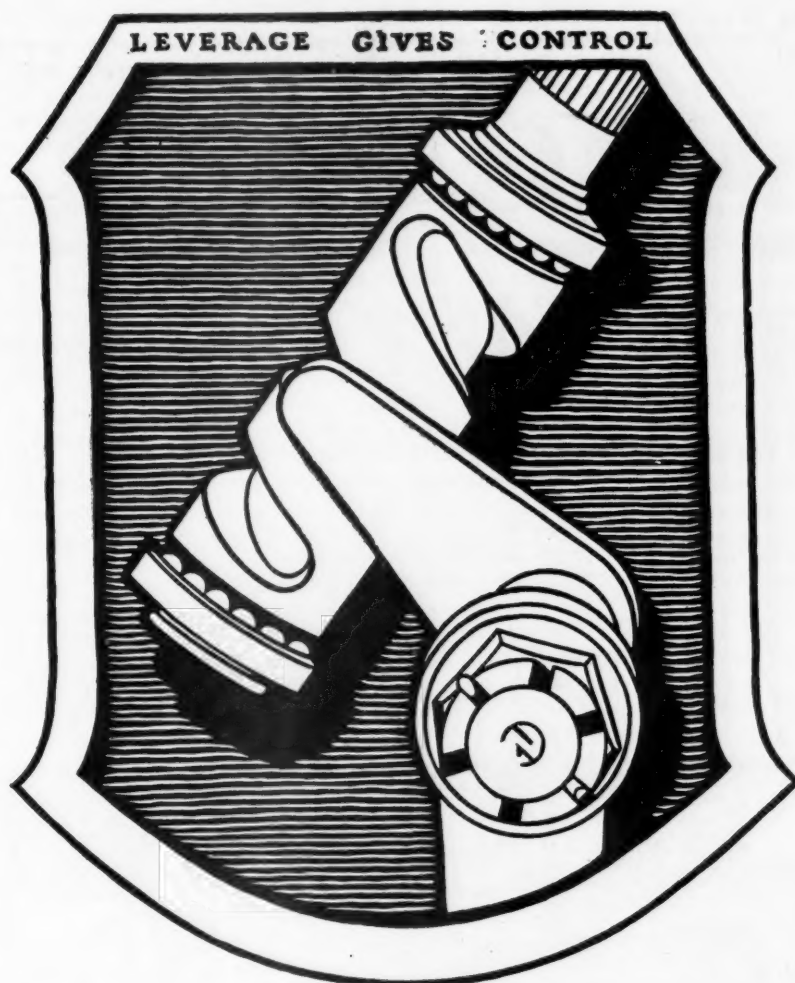
One of the principal selling features which the company will urge is the freedom from odors possible in an electric truck, this being set forth as a very important item in view of the fact that milk is so easily contaminated.

Some of the results of tests as made by Detroit Creamery Company are shown as follows: Route 1, distance five miles, load 32 cases; horse time, four hours, truck time two and half hours. Route No. 2, distance nineteen miles, load 28 cases; team time seven hours, truck time five and half hours. Route No. 3, distance 18 miles, load 22 cases; team time, eight hours, truck time, five hours. Route No. 1 was one-horse route, No. 2 two-horse route and No. 3 four-horse-teams alternating. This route was over ten miles of unpaved roads.

Due to the increased carrying capacity of the electric trucks with ease of operation, it is held that routes could be regrouped and increased in scope. Because the driver is paid on a commission basis he will be enabled to earn more money and is therefore satisfied to increase his work, the company holds.



The Detroit Electric Milk Delivery Truck Can be Controlled From Three Points—From Either Side and the Front



WHY "FIGHT THE ROAD?"

A DRIVER does not have to "fight the road"—or become fagged in mind and body when the car is equipped with the Ross Cam and Lever Steering Gear. Ross does the "fighting"—and relieves all the strain. Driving ought to have a maximum amount of pleasure and safety. With Ross—it *does*. Drivers are finding it out.

Write for the facts

ROSS GEAR AND TOOL COMPANY, 760 Heath Street, Lafayette, Indiana

ROSS
CAM and LEVER  **STEERING GEARS**

EASIER STEERING LESS ROAD SHOCK

Republic Announces New 1½ Ton Model

The new model 10-F of 1½ tons capacity just announced by the Republic Motor Truck Co., of Alma, Mich., was designed to haul what is commonly termed an "average load." Many new features are incorporated in this model which make it especially adaptable as a general all-purpose truck, filling a wide variety of haulage requirements. This new Republic model is, in reality, an outgrowth of the Republic model 10.

The outstanding improvements include a new type pressed steel radiator, new drum type headlights; longer wheelbase, deeper, thicker chassis frame; driveshaft brake and five main bearing engine.

The new model can be equipped with either pneumatic tires or the new cushion (solid) tires, according to the character of the service it is called upon to perform. This tire option widens considerably its scope of usefulness.

The new model is equipped with a drive shaft brake which will stop the truck in its own length at maximum governed speed. This brake consists of

two heavy contracting shoes operating on a large brake drum mounted on the drive shaft at the intermediate bearing bracket.

Gramm Announces New Model 65 Line

The Gramm-Bernstein Truck Corp., Lima, Ohio, has developed a new series, model 65 line, as it is called, the same being a maximum capacity 4000 lb. job made in three wheelbases.

This truck is built in four distinct models, as follows:

Model 65, which has a wheelbase of 138 in. with a distance behind the driver's seat to the end of the frame of 120 in.

Model 66, 150 in. wheelbase, with 144 in. back of the driver's seat.

Model 67, 138 in. wheelbase, which is a power operated dump chassis.

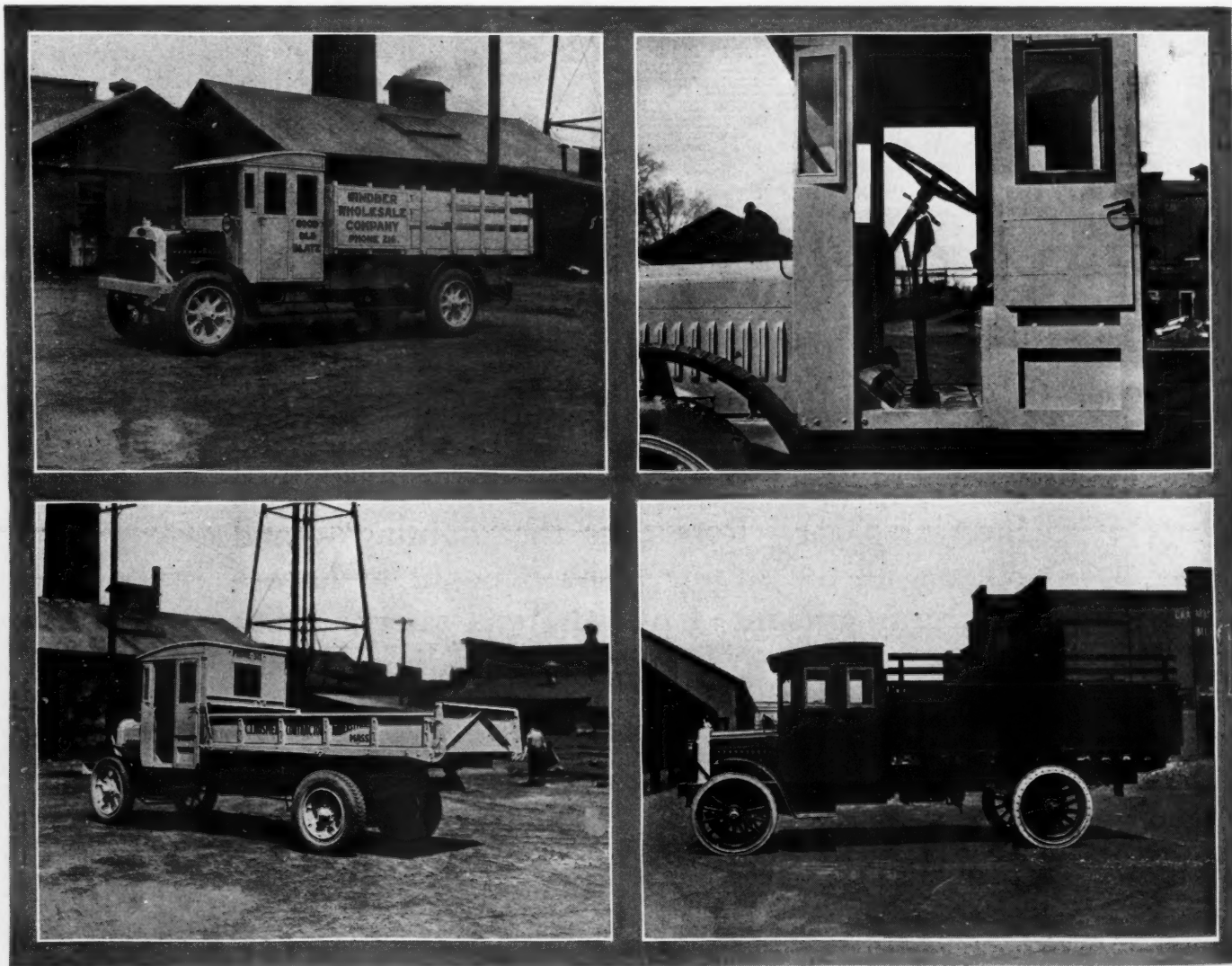
Model 68 is the tractor chassis having 112 in. wheelbase.

Optional tire equipment and wheel equipment can be supplied to meet the purchaser's own specification, at extra cost.

One of the features found on this line is the propeller shaft brake fitted with air cooled fins. This brake is accurately balanced to eliminate vibration and can be readily demounted by removing one bolt and two cotter pins. The well known Gramm transmission is also included in this new job. In this transmission the gears are constantly in mesh, the speeds being obtained by engaging jaw clutches, mounted on a six-splined shaft. This transmission provides three speeds forward, and is hung amidships.

The engine is a Continental Red Seal J-4, Liberty type, 4 cylinder engine, 3¾ in. bore, 5 in. stroke. Other units included are the Ross new cam type, 18 in. steering gear; dry disk clutch; flexible disk type two bolt Universal joints; worm drive rear axle; internal emergency brake, 16 x 2 in. on rear wheel; 5 x 2½ x ¼ in. frame; and extra heavy gage steel in steps, fender and hood.

The equipment is most complete, including cab with ventilated metal frame windshield; electric head lights; electric generator; heavy bumper; Alemite connections; hub odometer and complete set of tools.



Views of the New Gramm-Bernstein Model No. 65

Upper left: Shows this model with full length running-board and full rear fenders, with a slatted stake body and carrying a folding step at the rear. Below is the same model shown with a two-yard steel dump body, fitted with Woods underbody hydraulic hoist. Lower right: Showing special city service type body. The cab is of the enclosed type, with drop sash windows, also corner window which reduces the blind post and increases the angle of vision.

A NEW DEAL

FOR DEALERS IN SPEED TRUCKS

The Acme Super Speed Six offers dealers a chance to make bigger profits than ever before from the sales in this field. That's because it has the qualities always sought in a light truck, yet never found so completely until the Acme Super Speed Truck was placed on the market.

These qualities are dependability, speed, economy, *long life*. The Acme Super Speed Truck lasts 5 to 7 years instead of 1 to 2 years.

It's a thoroughly satisfactory truck to sell because of repeat business and because your service cost is cut to practically nothing. The Acme Super Speed Truck "keeps the faith" with its dealers because it does so with its owners. It's the best truck to sell because it's the best truck to buy.

Equipment includes real truck units: a 58 horsepower, six-cylinder motor with no vibration at 2500 r. p. m., electric lights and starter. Its load capacity is 3000 pounds, its speed over 35 miles an hour, and again—*its life is 5 to 7 years*.

Better investigate this new, better deal for dealers who want to make more money on the same overhead.

For Acme Super Speed Six is the best truck in the 92% truck market.

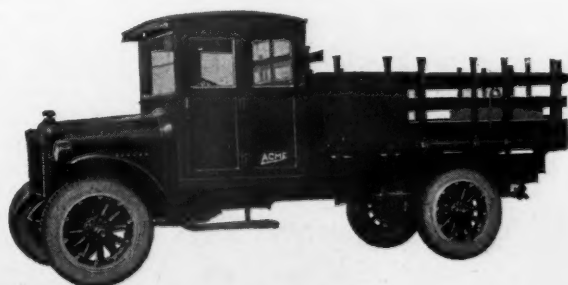
Circular and full information from

ACME MOTOR TRUCK COMPANY

532 Mitchell Street

Cadillac, Michigan

*"Acme Covers the Whole Field of Trucking With the
Balanced Acme Line"*



ACME

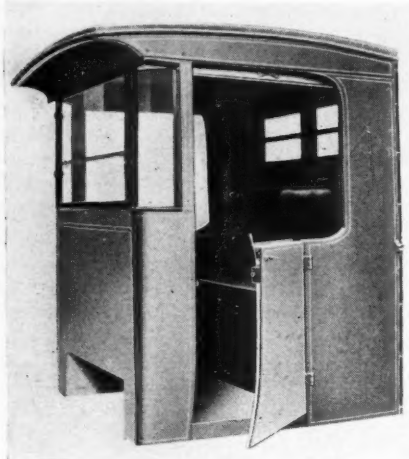
Trade-Mark Registered
in U. S. and Other
Countries



New "Weatherproof" Cab

Considerable advance in the design of heavy-duty truck cabs is seen in the new model "Weatherproof" recently put into production by the Weatherproof Body Corporation, of Corunna, Michigan.

The new model takes the place of various catalogued old models and of all special jobs because it meets all general conditions and requirements. Standardization on one model (two sizes) permits considerable savings in manufacturing and those are reflected in the new low prices.

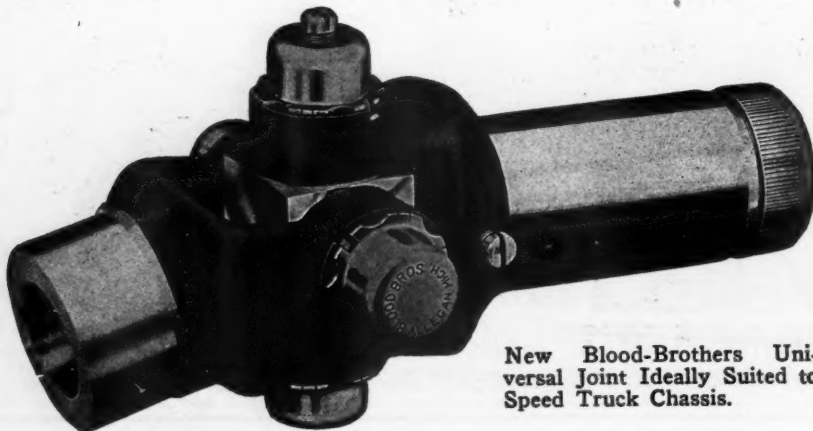


New "Weatherproof" Heavy-Duty Truck Cab

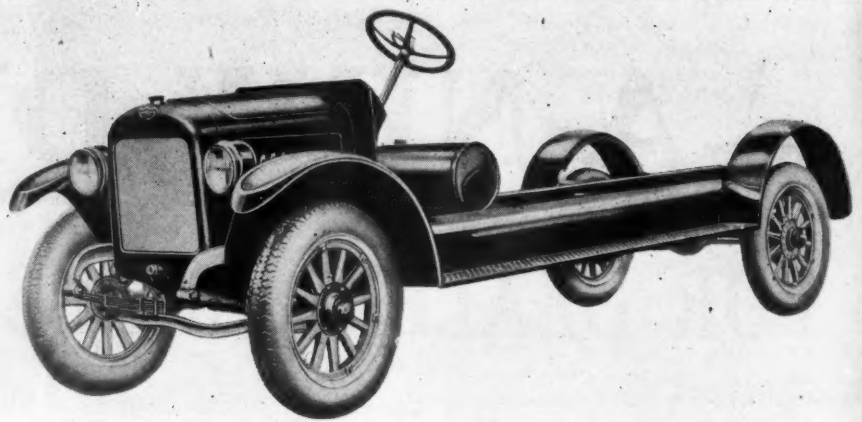
Among the outstanding features of construction are the metal framed plate-glass windshield and the rounded corner windows which give great freedom of vision; the sheathing of the entire body in steel for endurance sake; the absence of any loose parts, which prevents rattling; the placing of the doors 7 inches back of the usual place to permit driver to get in or out freely from either side; the deep cushion seat with lazy-back; the mortising as well as ironing of joints and corners; the slatted oil-ducked covered roof which prevents drumming.

Blood-Brothers Producing Lighter Universal Joint

Following several months of development and severe testing, the Blood-Brothers Machine Company, of Allegan, Mich., have placed on the market a lighter universal joint that is ideally suited to speed truck chassis. It is of the same de-



New Blood-Brothers Universal Joint Ideally Suited to Speed Truck Chassis.



Republic Rapid Transit Model Has Many Improvements

The above illustration shows the new Republic Rapid Transit chassis which contains numerous improvements, including the removable engine nose, radiator core support, rear engine support of the universal type to absorb road shocks. These features were illustrated in connection with the description of the Republic bus which appeared in our May issue on page 69.

sign as are their other sizes that have been on the market the past four years.

The new light joint does not sacrifice strength nor quality in spite of the fact that it is intended to help decrease the cost of trucks utilizing it. A special grease for retention in the joint is not necessary and lubrication can be accomplished with any accepted lubricant of high grade of a consistency similar to Vacuum CC.

This Organization is Doing It! Are You?

(Continued from page 10)

ator during the whole of its long trips. These considerations indicate that great improvement could be effected by a conveyor elevator installation. Just how and where such a system would run can best be determined by an engineer from a company handling this sort of equipment. Certain it is that this installation would not only eliminate the present confusion, but it would be a great saver of time and labor."

In his survey of a transfer company, Canavan found that the firm was overlooking the advertising advantages its trucks offered, so he reported as follows:

"Sales effort never loses an opportunity to boost its product. The truck bodies of this fleet yield the space of two large sign boards. Considering that these are valued at \$2,700 each per month or

two at \$65,000 per year, it would seem advisable to get the most out of this free advertising space. Inasmuch as the city is covered several times a day, a painting job that really stands out would impress the public with how big the business is and also how frequent the service is. In fact, the trucks being moving sign boards, seem to be everywhere, and a strong image can be made on the mind."

In another plant Canavan did not find the right kind of co-operation, so he wrote the officials of the company in his survey as follows:

"It cannot be said that there is any lack of this desirable quality but rather that a positive possession of it does not stand out. This isn't anything tangible, but rather something that is felt. Is there possibly a lack of recognition of positions and of the authority and responsibility attached thereto? In which connection comment is due the very wise move in relieving the general superintendent of the actual dispatching. This will enable him to bring the same efficiency in the handling of other phases of the business that he has brought to the dispatching."

The Canavan Motors Corporation is building its success by creating confidence. In making its surveys of transportation problems, President Canavan insists that only cold facts be stated and the recommendations must follow the selection of only the best type of equipment for the particular service.

"In my opinion, all selling of automotive equipment eventually will be done on the transportation analysis basis," says Mr. Canavan. "The dealer must be able to correctly analyze the business of a prospect, in order to advise him properly. Operators are more and more getting their fleets on an efficient basis and they are starting to keep accurate costs. This means that truck dealers must broaden the scope of their work and sell efficient transportation as well as trucks."

Canavan keeps in close touch with all users of the equipment he has sold. To keep every customer satisfied is a policy he rigidly adheres to. The services of his department of transportation engineering does not cease when a prospect makes a purchase.

Reap the Bigger Rewards A Business of Your Own Can Bring

If you have ever dreamed of a business of your own—where the rewards are more in keeping with the effort you put forth—

If you have always considered such a dream as only a dream—incapable of immediate realization—

If you however are open to conviction—are willing to listen to a plan that is both sound and practical—

Then Garford has something for you which you cannot afford to overlook.

It is a plan of merchandising dependable transportation to the truck users and operators of your community—a plan that embraces the closest co-operation of one of the oldest and most reliable manufacturers of motor trucks in America—a plan that has brought prosperity to hundreds of men like yourself.

Full details in brief easily comprehended form will be furnished on request. Write for them today—a postal will do.

The Garford Motor Truck Company, Lima, O.

Manufacturers of Motor Trucks 1 to 7½ Tons

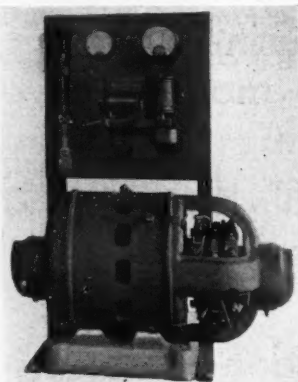
GARFORD

DEPENDABLE TRANSPORTATION

New Revenue for Repair Shops

This new charging equipment just placed on the market by the Marshall Electric Company of St. Louis, Mo., enables the repair shop to fully charge the battery of any commercial or passenger car coming in for repairs during a period of not more than eight hours. Most batteries would be fully charged in four to six hours.

This Outfit, Made by the Marshall Electric Co., Will Charge Batteries in Four to Six Hours.



Quick charging service is made possible by the Marshall System of constant potential charging and the equipment has been perfected so that it is entirely automatic in its operation and can be operated either day or night with or without attendant.

Any battery when placed on the line will automatically take the proper amount of current depending upon its condition, and each battery can be left on the line for any length of time until it is needed, as the charging rate is automatically tapered down to a very small amount as the battery becomes full.

New Development in Metal Cutting Torches

The Alexander Milburn Company, Baltimore, Md., has recently announced the Super Tip for use in oxy-acetylene cutting.

The distinctive features of this tip are a method of super mixing the gases and preheating the cutting oxygen as well as giving added velocity and penetration to the preheating and cutting jets. A further feature is that the tip is provided with a renewable seat at a fraction of the cost of a complete tip, rendering it unnecessary to re-machine or discard the used tips. This renewable seat facilitates the cleaning and maintenance of the tip.

The new tip retains all the advantages of the standard Milburn tip with the added advantages noted above. The mixture of the preheating gases takes place in multiple passages in the renewable seat. These gases then pass into an annular passage where they are given a swirling motion and an additional mixing. The gases are again separated and expanded into enlarged multiple passages leading to the orifices in the tip proper. Here the preheating flames are projected with an increased velocity inclined toward the high pressure oxygen jet resulting in a speedier cut, a narrower kerf and a material saving in gases.

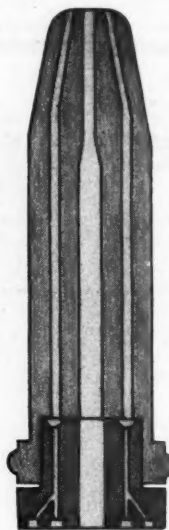
The "Super-Tip" with renewable seat is interchangeable with all sizes of Mil-

burn cutting tips and will fit all this company's torches manufactured since 1916.

This company has also brought out a new type of torch, known as the "Sheet Metal Torch." It is a sturdy, compact torch, light and convenient to handle on sheet metal, and other light welding. The torch works at highest efficiency with low and comparatively equal pressures of oxygen and acetylene.

The torch is capable of being handled easily in corners, limited spaces, etc. This is due to the elimination of the head; the tip screwing on to a threaded, curved tube. This feature does away with the perplexing conditions that arise when a "tight" place occurs—for instance, welding in corners.

The complete unit consists of: 1 sheet metal torch, 15 in. long; 3 tips for torch; 1 single gage oxygen regulator; 1 single gage acetylene regulator; 1 length oxygen and 1 length acetylene hose, 3 ply, 12½ ft. long; beginners supply of steel, cast iron and Tobin bronze rods and fluxes



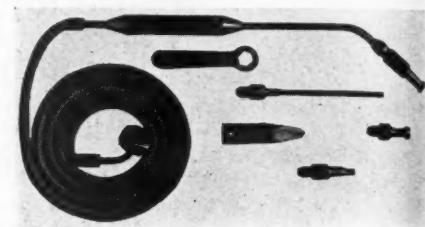
The Super-Tip

for same; 1 pair goggles; 1 pair leather gloves; 1 Pyro friction lighter; 1 set wrenches. This outfit lists for \$55 complete.

Prest-O-Lite 5 in 1 Outfit

A combination set of appliances, called the Prest-O-Lite 5 in 1 outfit, has been announced by the Prest-O-Lite Co., Inc., of Indianapolis. The outfit, for use with Prest-O-Lite gas, consists of a convenient handle with five interchangeable tips, including a small soldering head, which enables the operator to do a variety of soldering, brazing and heating jobs.

The intense heat which can be obtained, the convenience and completeness of the outfit and its ease and economy of operation, makes this outfit very desirable for the garage, repair shop, battery shop or factory. Price of the complete outfit is \$7.50.



Note the Five Interchangeable Tips Furnished With This Outfit

New Bus Chairs by Heywood-Wakefield

LONG distance journeys requiring passengers to sit in the same chair for many miles and for many hours has developed a nationwide demand for more comfortable motor coach seats. Realizing that motor vehicle service is second in distance only to steam railroads and that comfort is most essential, the Heywood-Wakefield Co., Boston, Mass., has developed three new chairs this season known as the Luxureed, Traveluxe and Tourease. All

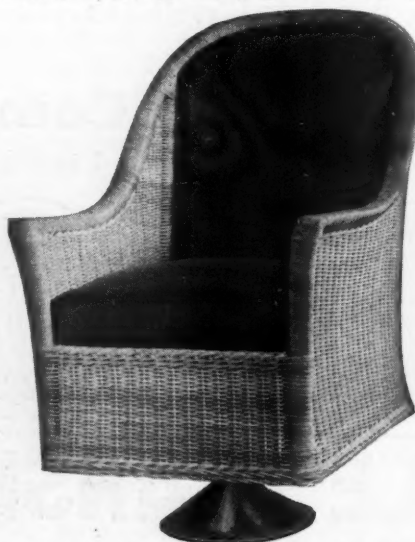
three are built with the main idea of supplying the maximum of comfort so as to make satisfied customers and increase the motor passenger transportation business.

The Tourease and Traveluxe chairs have already been installed in motor coaches throughout the nation. The Luxureed chair, illustrated, is a new design.

The Luxureed chair can be had with an iron base or with four legs like an ordinary house chair. If secured with a wide flanged steel base it can be furnished with or without a swivel. The chair can be attached to the floor at any angle thus permitting all passengers to have equal visibility rather than affording most of this pleasure to the person who arrives first and sits on the window side of the seat.

A fine round reed is woven about a sturdy wood frame, the latter being reinforced with angle iron braces. The cushion is removable, is stuffed with hair and has Comfy springs. It also rests on a box spring construction thereby increasing its comfort. The back is stuffed with hair so that passengers sink into it rather than sit against it.

Leather, imitation leather or plush coverings are most popular with this chair, although any other kind can be used. Any color can be used on the coverings and the reed so as to make the chairs harmonize with the color motif of the coach.



Showing One of the Three Models, the "Luxureed"

John O'Donnell

says

first again!



JOHN O'DONNELL
Ruggles Distributor
at Providence, R. I.

Mr. O'Donnell is known all over the country as one of the most successful pioneer motor truck distributors. He has established a large dealer organization for Ruggles Trucks in New England.

DEALERS:

Let us tell you HOW RUGGLES HELPS DEALERS SELL TRUCKS. Write for particulars.

RUGGLES MOTOR TRUCK COMPANY

Saginaw, Michigan

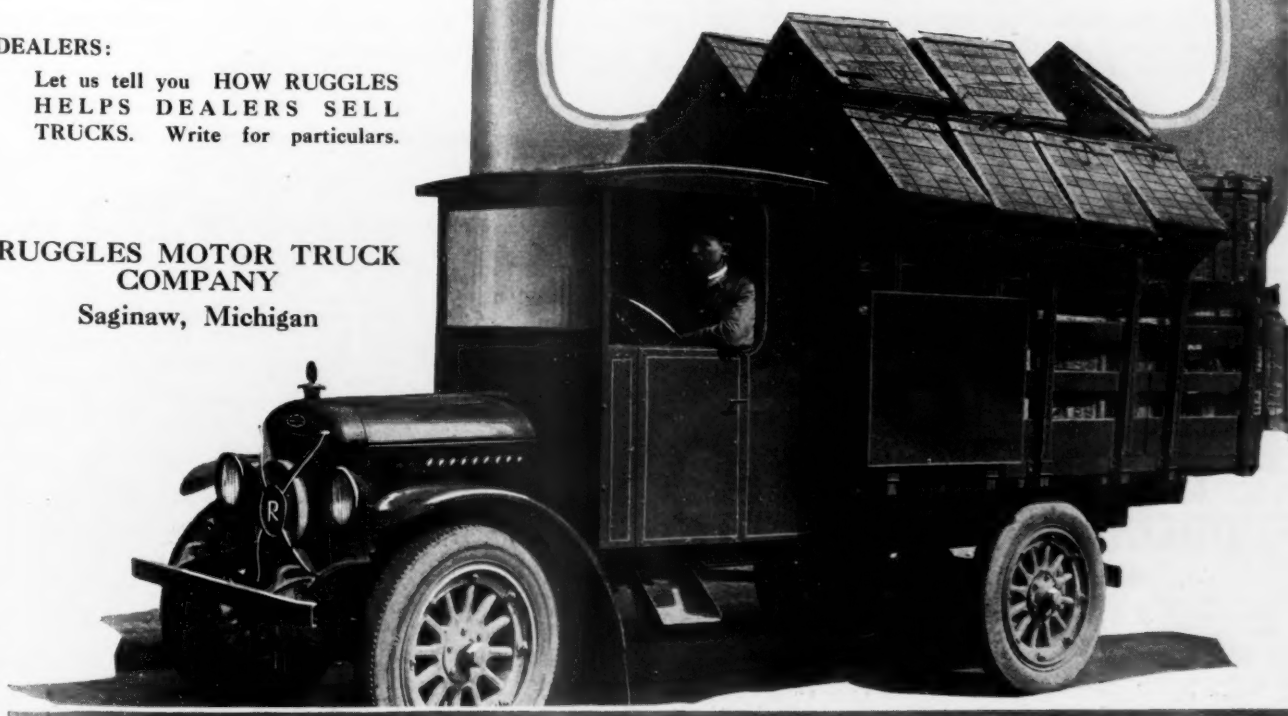


"RUGGLES DEALERS ARE MAKING MONEY!"

"For four years I have been distributing RUGGLES TRUCKS in New England. Every one of my associate dealers is making money. Every owner is not only satisfied, but enthusiastic over Ruggles Performance.

"Dealers who sell Ruggles Trucks have a big sales advantage in both LOW FIRST COST and LOW UPKEEP—the two factors that count most in truck merchandising.

"Ruggles is certainly meeting the demand of truck buyers today for BETTER TRUCKS FOR LESS MONEY!"



Standard Replacement Parts Association Formed at Detroit

Thirty-seven Jobbers and Twenty-eight Manufacturers Apply for Membership in New Organization

FORMATION of the National Standard Parts Association was accomplished at Detroit, May 24, at an organization meeting attended by 113 manufacturers and jobbers. Prior to the formal launching of the association, which is set for the first week of November in Chicago, an executive committee, named at the organization meeting, will function in enrolling members and in drafting the constitution and by-laws.

By action of the organization meeting, membership in the association is restricted to manufacturers of standard replacement parts and jobbers specializing in wholesaling new parts. Application for membership at the inaugural meeting totalled 65, about 37 of which were from prospective jobber members and 28 from manufacturers. Expense of organization was fixed at about \$10,000, which will be raised for the most part from initiation fees.

A. T. Haugh, vice-president of the King Sewing Machine Co., Buffalo, was elected chairman of the executive committee, which is composed of three manufacturers and four jobber members. The other members are: G. W. Moffett, Warren Gear Products Co., Warren, Pa.; F. C. Kip, Milwaukee Die Casting Co., Milwaukee; R. M. Schure, Southern Bearing Co., Atlanta; O. J. Peterson, P. D. Auto Parts, Inc., Hartford, Conn.; W. T. Mills Auto Parts Co., St. Louis, Mo.; C. H. Shuptrine, Shuptrine Parts Service, Cedar Rapids, Iowa.

The executive committee was selected so far as possible from men living within a 2500 mile radius of Chicago, to permit

of meetings at least once monthly in Chicago, so that work of preparing for final organization may proceed rapidly. It is planned to make Chicago the site of the permanent headquarters of the association, an organizing secretary will be named at once to work with the committee in completing its plans.

The organization meeting was presided over by W. D. Patterson, of Patterson Parts, Inc., San Francisco, a prime mover in getting the association plan under way, and who with Mr. Moffett and Fred. P. Howard of the W. D. Foreman Co., composed the Purpose Committee.

Mr. Moffett was vice-chairman and S. D. Callaway, Turner Manufacturing Co., Kansas City, Mo., secretary. Mr. Patterson declined membership on the executive committee owing to the distance from Chicago. General outlines of the membership provisions and the purpose of the association as set forth by the Purpose Committee were accepted with little change, resulting in the meeting being carried forward rapidly and giving time for adjournment in time for dinner.

The executive committee met Sunday to select regional committees and to outline its other views. Discussion at the organization meeting centered itself principally upon qualifications for membership, these were set forth as follows:

Jobber memberships are open to those whose principal business is wholesale, whose business further is principally new parts, and to accessory jobbers who segregates his parts department and handles it through a parts manager. Manufacturer memberships are open to

those who manufacture and sell standard brand parts for wholesale distribution.

The objects of the association were set forth as follows:

The betterment and development of the parts industry.

The development of effective standards to which parts should conform.

To affect a close contact between the manufacturer and jobber through which information of general interest may be transmitted.

To establish a bureau of general information to include: Catalog department, credit and collection department.

To conduct a field survey of trade possibilities and distribution needs.

To educate the public and trade as to distinct advantages of standard parts.

The establishment of a yearly trade show and convention at some central point at which merchandise may be shown and matters of general interest discussed. At this show there should be division meetings of manufacturers and jobbers to be followed by general assembly at which both bodies are to be present and concerted action taken on matters under consideration.

It was voted to eliminate a traffic department as part of the work of the bureau of general information as a needless expense because of the availability of co-operation on this particular work from traffic departments of other associations. As the association meets traffic problems, it will delegate a member to take these up with the traffic departments of other associations in the industry and meet its share of expense.

List of Firms Represented at Organization Meeting of National Standard Parts Association:

Sanborn Motor Bqpt. Co.
E. E. Emory Co.
Illinois Auto Supply Co.
National Bushing & Parts Co.
Dayton Auto Sales & Parts Co.
Shuptrine Parts Service.
Spencer Smith Mfg. Co.
Thompson Products, Inc.
Patterson Parts, Inc.
Milwaukee Die Casting Co.
Warren Gear Products Co.
Turner Mfg. Co.
American Hammered Piston Ring Co.
Timing Gears Corp.
Carr Parts Co.
Republic Gear Co.
L. C. Smith Bearings Co.
American Piston & Machine Co.
Western Gear Co.
Fafnir Bearing Co.
Detroit Ball Bearing Co.
Laminated Shlm Co.
No-Leak-O Piston Ring Co.
King Sewing Machine Co.
Houpert Piston Co.
Mackay & Austin, Inc.
Johnson Bronze Co.
W. D. Foreman Co.
U. S. Bearings Co.
P-D Auto Parts, Inc.
McQuay-Norris Mfg. Co.
Dalton & Balch, Inc.
Warner Gear Co.
Standard Motor Parts Co.

Cleveland Piston & Mfg. Co.
Diamond Steel Products Co.
Timken Roller Bearing Co.
Benjamin Auto Parts, Inc.
Peoria Auto Parts Co.
Meehls Auto Parts Co.
Aetna Ball Bearing Mfg. Co.
Cleveland Piston Pin & Bolt Co.
Dayton Auto Parts Co.
L. T. White.
Pioneer Motor Bearings Co.
American Piston Co.
American Gear Co.
W. T. Mills.
T. S. Handlay Auto Parts
Hempel Machine Co.
Elgin Machine Works
Automotive Gear Works
The Vellumold Co.
New Orleans Auto Supply Co., Inc.
Cohen Auto Parts Co.
Douglas Dahlen Co.
Timing Gears Corp.
Southern Bearings Co.
Condon Bearing & Supply Co.
Victor Piston Pin Co.
Bearings Auto Parts Co.
Automobile Bearing & Eqpt. Co.
Service Parts Co.
Aberdeen Motor Supply Co.
H. & H. Machine & Motor Parts Co.
Interstate Machinery & Supply Co.
Abel Automotive Supply Co.
Kauffman Metal Products Co.

Automobile Piston Co.
Gill Mfg. Co.
Wisconsin Machine & Mfg. Co.
American Auto Parts Co.
Baldwin Auto Parts Co.
Hawley Sales Co.
Mitchell Morris Co.
W. H. Metz Co.
Ohio Piston Co.
Wel-Ever Chicago Sales Co.
G & B Motor Parts, Inc.
The Willis Co.
Wel-Ever Piston Ring Co.
Willis Piston Co.
Northern Auto Supply Co.
Detroit Auto Piston Co.
Kelso Mfg. Co.
American Gear Co.
Mee-Oakes Co.
L. H. Welmer Co.
McCord Radiator & Mfg. Co.
Dall Motor Parts Co.
Bock Auto & Parts Co.
Wilkening Mfg. Co.
Burgess-Norton Mfg. Co.
The Piston Ring Co.
Automotive Service Co.
Greb Co.
Detroit Steel Products Co.
Shepard Thomason Co.
Puritan Auto Parts Co.
Buckeye Brass & Mfg. Co.
Auto Bearing & Eqpt. Co.
L. L. Bousquet.

Mr. Dealer, Do You Know

You have the opportunity of a lifetime?

That Motor Trucks are an absolute necessity in our daily life?

That no one denies Motor Truck sales possibilities?

That G-B trucks are masters of every traffic situation?

That they can instantly drop back into lower speeds without any clashing of gears?

That you are positively safe on the steepest grade under the worst conditions?

That you can stop short without skidding?

That we are originators of inbuilt service?

Because if You Don't Know

and if you have not carefully gone over our specifications in comparison with any other truck on the market, not simply the units, but the COMPLETE TRUCK in every detail, it is no wonder that you are not succeeding in making the number of sales you should, thereby increasing your bank balance.

To sow good seed means a start for a good harvest.

Therefore we have decided to give extraordinary values this year which will greatly lessen your sales resistance in the future.

We are extending every co-operation in sales, service and finance.

What are you doing in your territory to cash in on this opportunity?

*This is the Year for the Big Start—
Next Year May be Too Late*

Gramm-Bernstein Truck Corporation

In Our 24th Year

Lima, Ohio

International Harvester Announces 30-Passenger Bus Chassis

A NEW 30-passenger bus chassis is now in production by the International Harvester Co., at its Akron plant. It is designed for service where a 5000 lb. capacity, four-cylinder unit would be suitable. The speed range with 36 by 6 pneumatic tires is up to 35.5 m. p. h. with 7 to 1 gear ratio or 27.5 m. p. h. with 9 to 1 ratio. The wheelbase is 190 in. and the chassis is suitable for either urban or suburban travel. One of the two bodies used is a six-door side entrance design with continuous transverse seats and the other has a center aisle.

The engine is the International block cast $4\frac{1}{4}$ by 5 in. four cylinder unit with removable cylinder sleeves and ball-bearing crankshaft. Lubrication is by combined splash and pressure feed, ignition by the Remy battery system and the carburetor is the $1\frac{1}{4}$ in. vertical International. The overhead valve mechanism is entirely inclosed. If desired by a fly-ball type of governor will be fitted to hold the speed to 16 m. p. h.

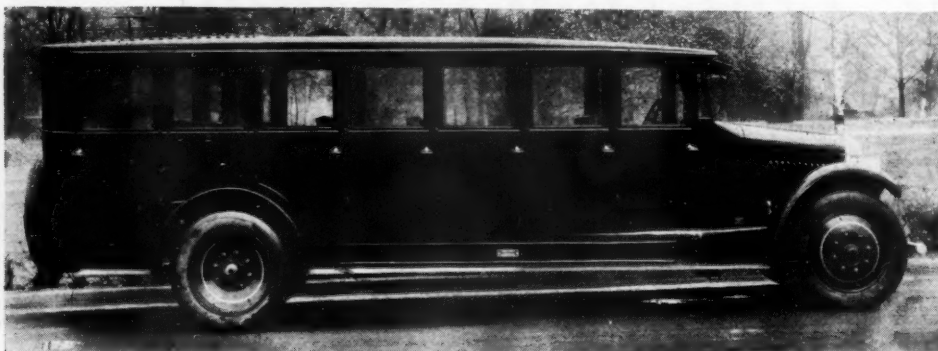
The drive is through a multiple dry disk clutch to a four-speed gearset mounted in unit with the power plant. This has

The rear axle is an International internal gear. The carrying member is a round section drop forging with annular ball bearings for the wheels. The ratios supplied are either 7, 8, or 9 to 1. The front axle is an I-beam section with Elliott type heat treated nickel steel knuckles. The front wheels are carried on taper roller bearings.

The spring suspension is semi-elliptic with cantilever auxiliary springs. The front springs are $41\frac{1}{4}$ by $2\frac{1}{2}$ in. and the rear $56\frac{3}{4}$ by 3 in. with an underslung mounting on the rear axle. The cantilever auxiliary springs are $20\frac{1}{4}$ by 2 in. front and $34\frac{3}{4}$ by $2\frac{1}{2}$ in. rear.

The service brakes are internal expanding, operated with air pressure controlled by the pedal. The emergency brake is hand operated and is external contracting mounted on the propeller shaft. The total braking area is 660 sq. in. The wheels are demountable disk with 36 by 6 in. single tires in front and 36 by 6 dual in rear.

The chassis dimensions are $275\frac{1}{2}$ in. overall length; from cowl to end of frame $205\frac{3}{4}$ in. The overhang behind the rear axle is $54\frac{5}{8}$ in. The outside width of the frame is 34 in. The height of the frame



The New International Harvester Bus is of Six-Door Side Entrance Design

direct drive on third speed and an over-drive on fourth. The gear reductions are: Fourth 0.627 to 1, third direct, second 1.7 to 1, first 3.12 to 1, reverse 3.75 to 1. Further reduction is secured through the internal gear drive. Behind the gearbox there is a hollow propeller shaft with a universal at each end. The shaft is broken at the center of its length where the propeller shaft brake is located and supported by a chassis cross member.

at the door is 24 in. with normal load. The road clearance is $7\frac{1}{2}$ in. under the front axle and $15\frac{5}{8}$ in. under the rear axle. The turning circle is 70 ft. The regular equipment with the chassis includes front bumper, electric head and tail lights with generator mounted on gearset, electric starter, horn, clock, oil gage, gasoline gage, speedometer, automatic windshield cleaner and self-contained switch panel.

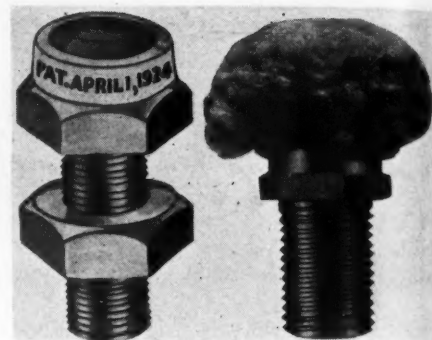
Machine Tool Exhibit at Yale University

The fourth annual machine tool exhibit run under the joint auspices of the New Haven branch of the American Society of Mechanical Engineers, Yale University and the New Haven Chamber of Commerce will be held September 15 to 18 in Mason Laboratory of Yale University, New Haven. "Greater Production" will be the keynote of the papers read at the evening sessions.

The Fabroil Silent Valve Tappet

This new valve tappet adjusting screw is not only silent in operation but prevents excessive wear. It eliminates the valve tappet click and the difficulties that are caused by close valve tappet adjustment.

The General Electric Company's research laboratories, after three years of experimental work, have developed "fabroil," which is a non-metallic substance



The Fabroil Silent Valve Tappet

of spinable cotton fibres standing horizontally and highly compressed in a cupped head of the adjusting screw, so that the ends of the fibres receive the shock from the metal to fabroil contact.

Fabroil, it is claimed, possesses many times the life of hardened and ground steel parts, is practically wear proof and remains resilient and cushions the shock. Three years of experimental work have failed to show any wear on test samples beyond a point of permanent settling of materials. The distinctive features of fabroil tappet adjusting screws include absolute silence, and permit a wider gap between adjusting screw and tappet. It actually tests by scleroscope 60-point hardness and it is possible as a general rule to run engines one to two years without a single adjustment being made on these parts.

John C. Hoof & Company, Chicago, Ill., are manufacturing the Fabroil Silent Tappet Adjusting Screw under an exclusive license from the General Electric Company and patents dated April 1, 1924. These fabroil screws can be supplied for 90 per cent of all motor cars from standard service stocks.

Is the "Piece-Work" System Practical and Profitable?

(Continued from page 24)

"It is much safer to meet this situation in this way. As I said before, when we first started the piece-work system, we spent approximately 12 months in estimating. This must be very accurate before you can make a step in any direction. We know what we can expect in profit on every estimate, we can check up at the end of each day and find out just where we stand. You will find many who will be opposed to this system.

"It requires a lot of talking and a lot of thinking to instill this spirit into them. But after they find that they are getting the breaks, and that you are treating them square and they will increase their pay checks about 20 per cent, they will then begin to realize that this is the solution for them. I do not believe that you could even drag the men back to the hourly rate. They become more enthusiastic when they begin to realize that they have to work to make money. This system has shown my superiors a fair profit and we have it installed in three of our branches and these three organizations are improving wonderfully."

THE COMMERCIAL CAR JOURNAL

Entered as second-class matter at the Post Office at Philadelphia, Pa.,
under the act of March 3, 1879

Vol. XXVII PHILADELPHIA, JULY 15, 1924 No. 5

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Published the 15th of each month by the

CHILTON COMPANY

Chestnut and 56th Streets Philadelphia, U. S. A.

C. A. MUSSELMAN, President A. H. VAUX, Sec'y and Ass't Treas.
A. B. SWETLAND, Vice President H. J. REDFIELD, Treasurer

Owned by United Publishers Corporation, 239 West 39th Street, New York;
CHARLES G. PHILLIPS, President; A. C. PEARSON, Vice-President;
FRITZ J. FRANK, Treasurer; H. J. REDFIELD Secretary.
Telephone.....Sherwood 1424, Philadelphia

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SUBSCRIPTION RATES

United States and Possessions	\$2.00
Canada	3.00
Foreign	4.00

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"Beyond the Price"

Built into this new standardized cab are all those superior features and qualities which one rightly expects from our institution. For instance: Largest possible window area—for free vision; hardwood frame and steel panel construction—for long life; wide doors, well to rear—for free access to seat; deep cushion seat and lazy-back—for driving comfort; metal framed, ventilating windshield with plate glass—for real satisfaction, etc. These features alone would justify a higher price than we set.

Yet we add still more value. Many little-big things which are more a matter of conscience than specification. For instance: Every stick of wood is *sound*; two and three bolts are used where one would "get by"; deck slats are *extra large* and round on *all* corners; the windshield rubber runs *clear across* and *up both sides*, etc.

In such ways we emphasize two points—(1) our ideals as cab builders, (2) the economies of our exceptionally large production.

We give value "*beyond the price.*" Send for complete specifications.

Weatherproof

Weatherproof Body Corporation

438 Shiawassee Street

Corunna Michigan

Builders of Truck Cabs, Bus Bodies, Automobile
Tops, Passenger and Commercial Bodies



Propeller Shaft "Whip" Compensated For Only With Self-Aligning Ball Bearings

STRAINS and stresses due to weaving of the frame and "whip" of the propeller shaft have little effect on the Skayef Self-Aligning Ball Bearing used as center propeller shaft support in this bus.

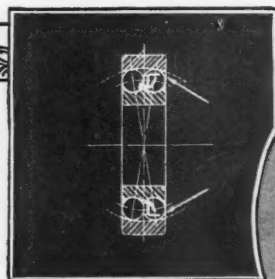
Skayef is the only ball bearing possessing the inherent ability to

compensate automatically for any misalignment, without sticking, binding or setting up of internal strains even under severe operation conditions. As a result it has found universal recognition as the best ball bearing for this location on all types of buses and trucks.

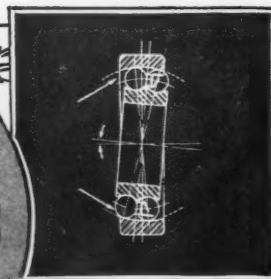
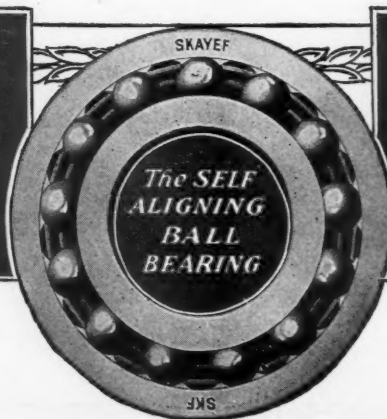
THE SKAYEF BALL BEARING COMPANY

Supervised by **SKF** INDUSTRIES, INC., 165 Broadway, New York City

1205



Normal View



Deflected View